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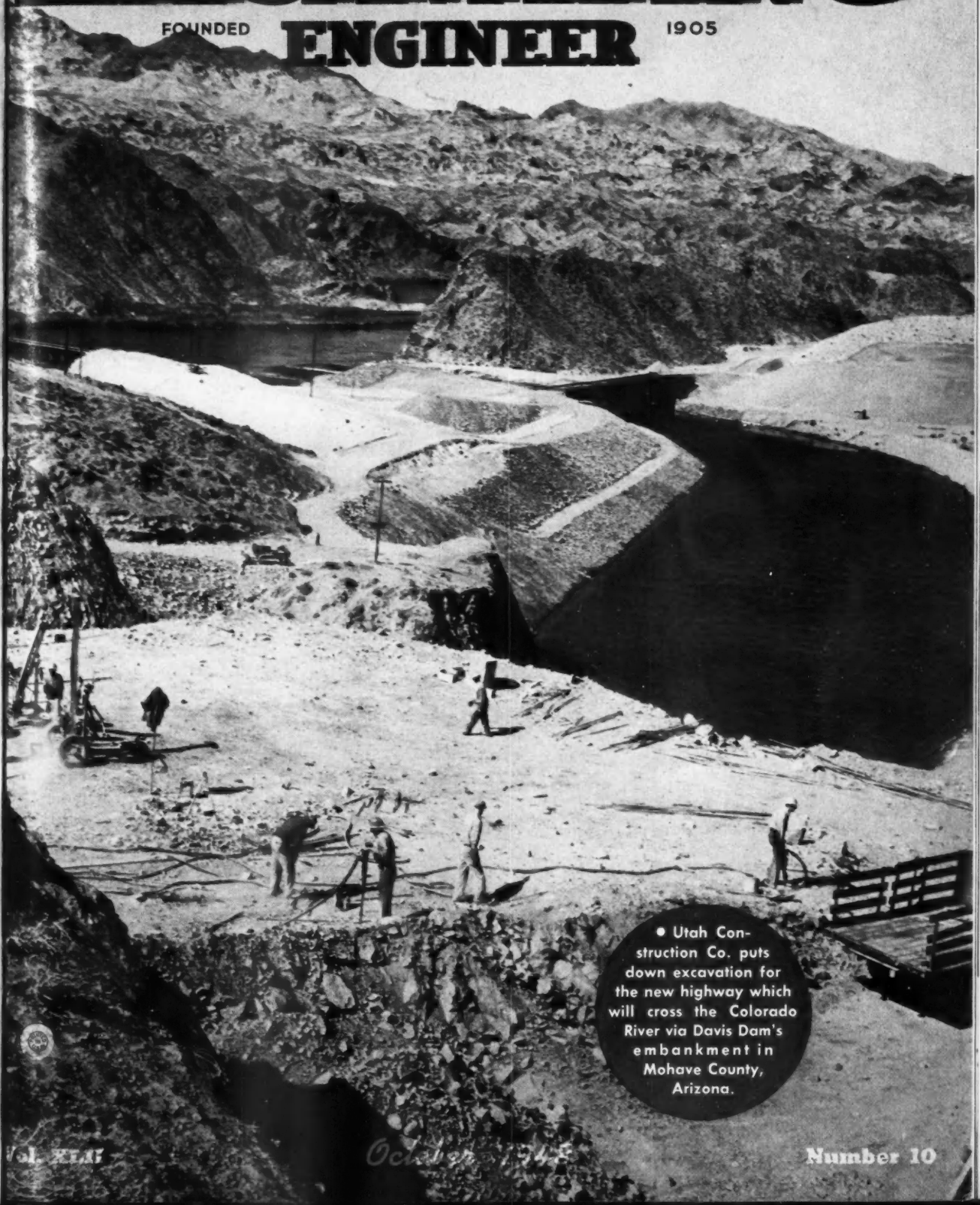
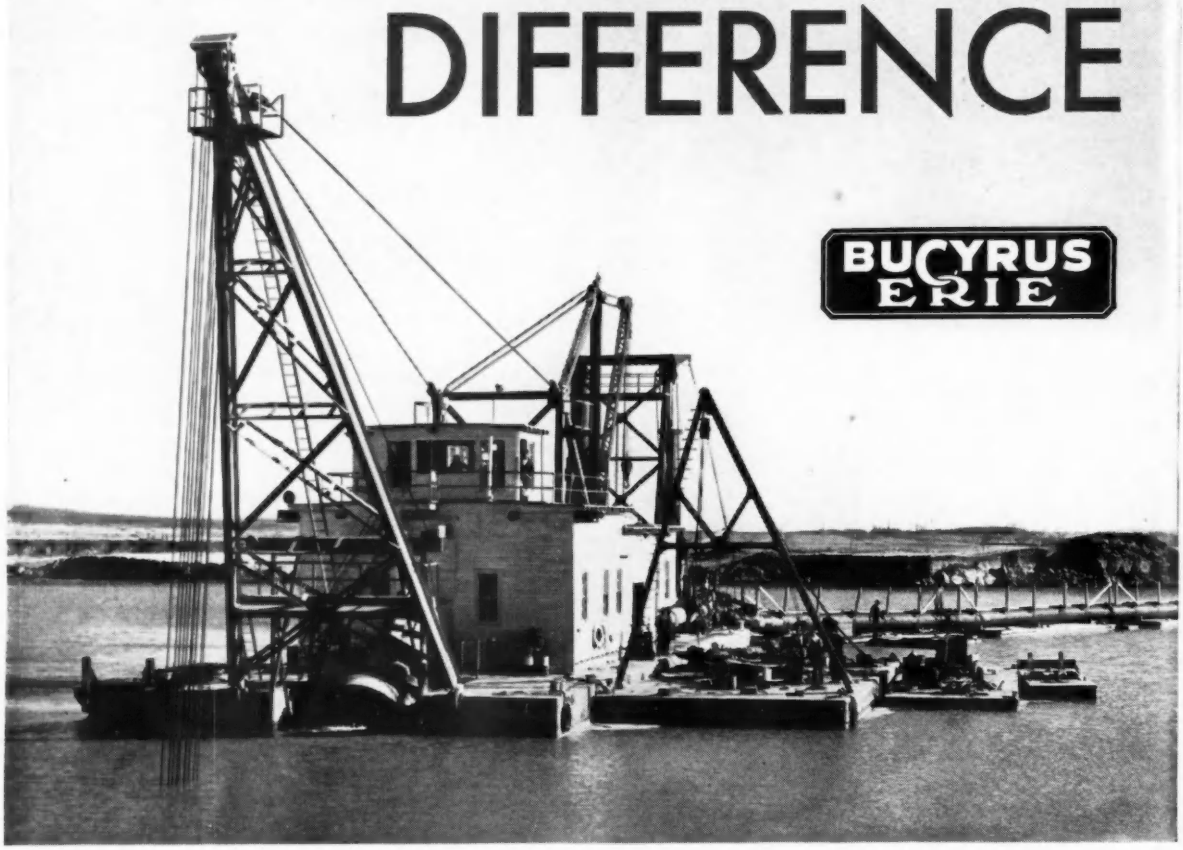


• Utah Construction Co. puts down excavation for the new highway which will cross the Colorado River via Davis Dam's embankment in Mohave County, Arizona.

Vol. XLII October 1945 Number 10

DESIGNED *with a* DIFFERENCE



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For widening rivers, deepening harbors, excavating canals, land reclamation — whatever the work that requires a hydraulic dredge — Bucyrus-Erie is prepared to design and build a machine that will answer your needs with high-quantity, low-cost output.

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Add to this fund of practical knowledge the unparalleled manufacturing facilities of Bucyrus-Erie — most complete of any in the industry — and the skill of expert craftsmen working with the best in modern tools and materials, and the result is bound to be a dredge that's "years ahead" . . . a dredge you can depend on for efficient, profitable service.

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Cuts Down the Costs

EARTH MOVER ALL-WEATHER
for drawn vehicles and general traction

BUY and SPECIFY
GOODYEAR — *it pays!*

HERE'S the tire that moves big loads at rock-bottom costs — *because it's designed and engineered for the job.* It's Goodyear's Earth Mover All-Weather — the "right" tire for the wheels of drawn vehicles, or for general traction. "*Right*" for rolling, because its wide, rounded contours provide maximum flotation, prevent deep penetration of the ground, reduce sideslip on fill, give sure-footed *easy* going.

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for maximum traction on drive wheels

HARD ROCK LUG
for super-stamina in all rock work

All-Weather, Sure-Grip—T.M.'s The Goodyear Tire & Rubber Company

GOODYEAR

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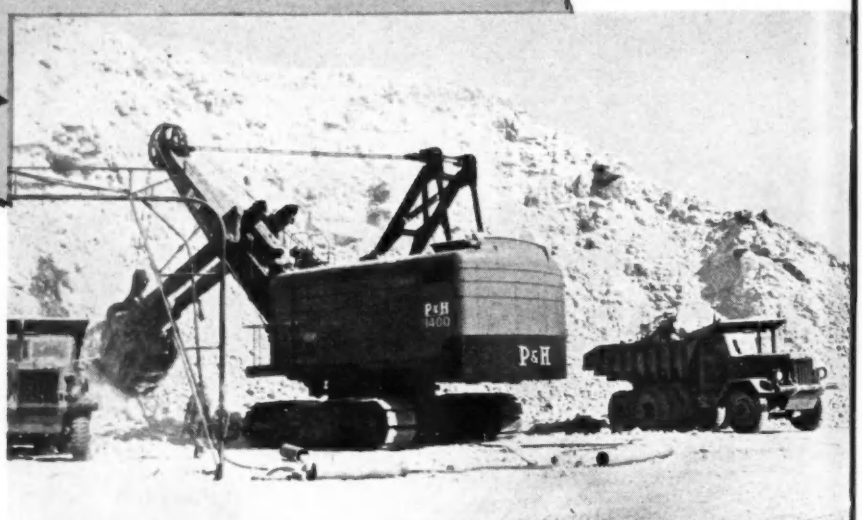
MORE YARDS ARE MOVED ON GOODYEAR OFF-THE-ROAD TIRES THAN ON ANY OTHER KIND

Double Attack ON DIGGING COSTS!

This pair of P&H Model 1400 Electric Shovels (4 cu. yds. capacity) is stripping and loading copper ore for the Inspiration Consolidated Copper Company at Inspiration, Arizona.



● More and more users are reordering P&H Electric Shovels to insure steady operation — lower costs. P&H's air-filtered cab is a case in point.

To protect electrical equipment from abrasive dust and dirt, a highly perfected ventilating system filters all air which enters the P&H cab. Only clean, fresh air rushes through motors and generators. Once used, it's exhausted directly to the outside—*not recirculated.* This important safeguard keeps electrical units at full efficiency, prevents damage to equipment, increases productive time. Like Magnetorque Drive and independent propel, it's another important P&H added value.

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EXCAVATING ENGINEER

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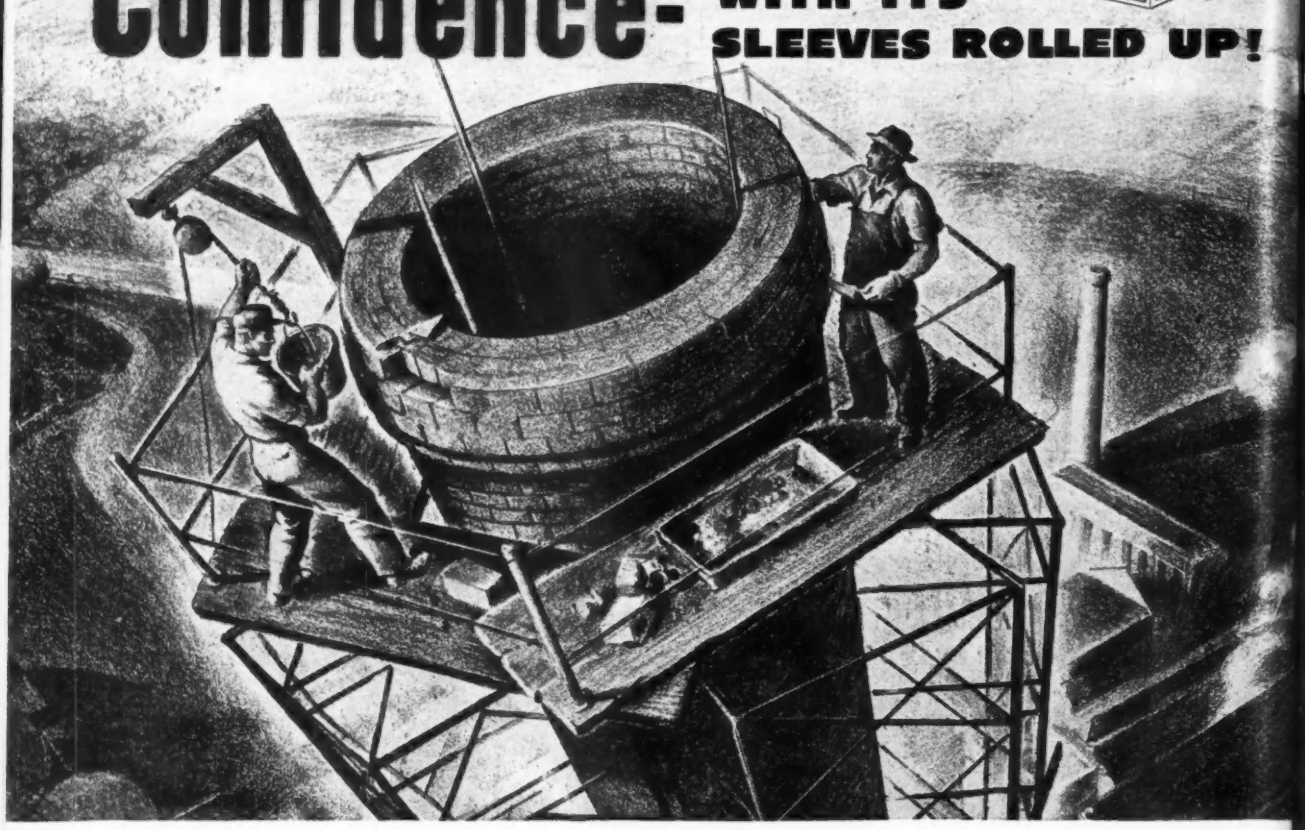

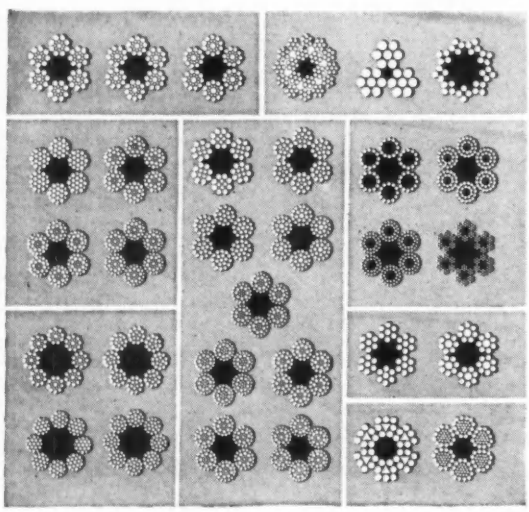

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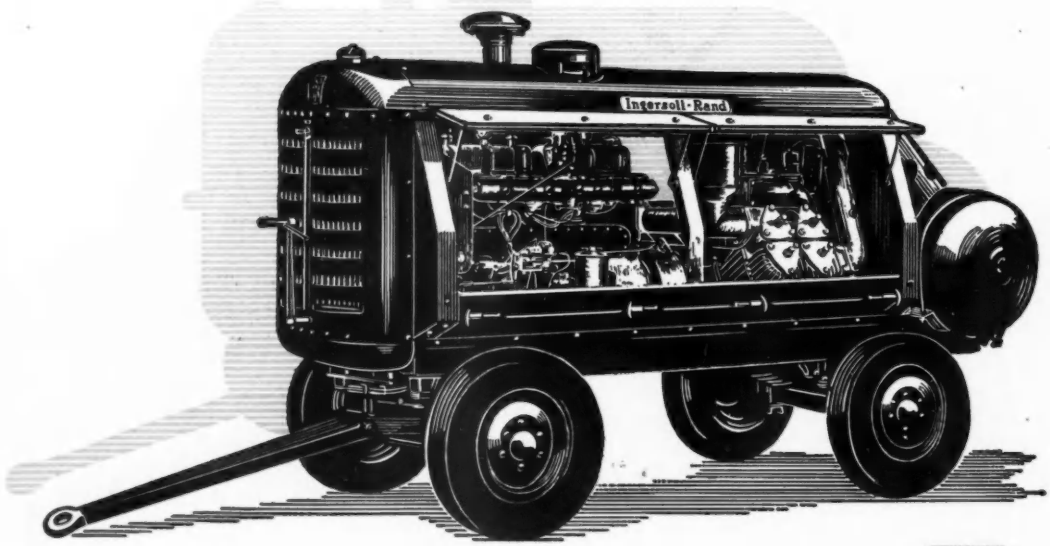

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- Big 27.00 x 33 tires on drive and trailer wheels

For earth moving operations requiring big yardage production, this large capacity Bottom-Dump Euclid fills the bill. Its low height and wide hopper facilitate loading by big shovels, draglines, overhead hoppers, and the Euclid Loader. Short wheel base of tractor and the universal hitch design permit short turns and assure easy handling.

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Engineered for endurance, this husky Euclid hauls big loads at high speeds...pays off in better profits and all-around economy.

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EUCLIDS *Move the Earth*

OVER TWENTY YEARS SERVICE

"No major repairs!"

Outstanding production records are an old story to Bucyrus-Erie excavators, which have consistently piled up long hours of operation with low maintenance costs. Take this Bucyrus-Erie 30-B dragline, for instance. Here is part of a letter received from Mr. J. G. MacLachlan, manager of the Hudson Bay Railway, Manitoba, Canada:

"The machine has been in continual seasonal operation since September, 1926 . . . has excavated 100 miles of side and off-take ditches, largely in permanently frozen ground, and other excavations to a total of approximately 1,000,000 cubic yards. We have had to make no major repairs."

There is no magic formula for the long life of Bucyrus-Eries. Durable parts in an efficient basic design; easily-made, long-lasting adjustments; simple, effective lubrication — all these play an important part in keeping Bucyrus-Eries on the job year in, year out, with a minimum of "time out" for repairs and with consistently economical operation.

Your Bucyrus-Erie distributor can show you why today's Bucyrus-Erie ⅜ to 2½-cu. yd. excavators can be depended upon for long service and still be "easy on the upkeep." Let him give you more information.

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S·U·H·B speeds the job with "CATERPILLAR"

2

3

1 The "heart-throb"—main pumping inlet on the Central Valley Project. "Caterpillar" equipment dominates the picture.

2 "Caterpillar" D8 Tractor pulling "Caterpillar" Elevating Grader loading "Caterpillar" W10 Wagons pulled by "Caterpillar" DW10 Tractors.

3 "Caterpillar" W10 Wagon, pulled by "Caterpillar" DW10 Tractor, receiving fast-haul loads from dragline.

W. R. ("Bill") Mathews, superintendent, says: "Tractors?... I don't think there's anything that will beat 'Caterpillar'. Power and dependability are all anybody could ask. Been in the construction game since 1925 and have used 'Caterpillar' power ever since."

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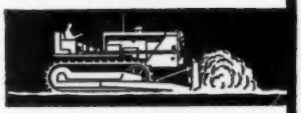
Numbered are the days when important earthmoving projects will still be undertaken with poorly matched machinery. "Caterpillar" Zoned Equipment—specially designed to work in unison—has set new standards of construction speed that make successful bidding against it no easy matter.

Take the case of Stolte & United Concrete-Harrison & Bell ("S-U-H-B"): Working on a 960-day completion contract, their handling of a 4,800,000-yard "slice" of California's Central Valley Project brought into action "Caterpillar" units that include D8 and D7 Tractors with bulldozers for leveling and push-dozers for scraper loading; a fleet of DW10 (wheel-type) Tractors and W10 Wagons for fast, long hauling from dragline and "Caterpillar" Elevating Grader; a No. 12 Motor Grader for building and maintaining haul roads. "Every day a big-capacity day!"

CATERPILLAR TRACTOR CO. • PEORIA, ILLINOIS

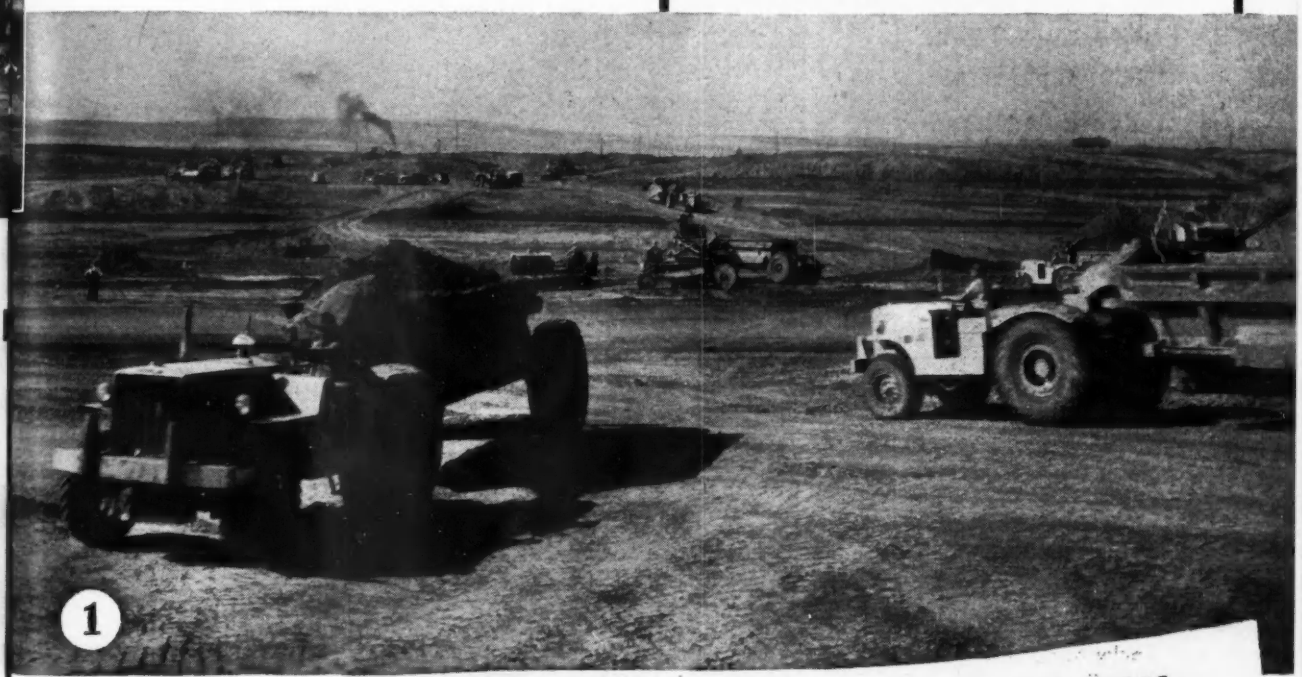
"Caterpillar" builds units you need to zone equipment for *lowest costs on earth:*



1 Track-type tractors for "push"-distance earthmoving.

2 Track-type tractors for loading and pulling scrapers on medium hauls.

3 Wheel-type tractors for high-speed long hauls (with scrapers or wagons) — plus motor graders for finishing and haul-road maintenance.



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ENGINES • TRACTORS • MOTOR GRADERS • EARTHMOVING EQUIPMENT

It's EASIER to get Wayne Crane from Job to Job . . .

Says Operator "Bill" Nigro of Pittsburgh, Pa.

W. B. NIGRO

"Operation of the Wayne Crane is very simple, which makes it easy for all operators to handle. The machine is easy to get from job to job because it travels under its own power. I find the Wayne Crane a fast-operating machine, and it does our work at a low cost with little maintenance."

These Wayne Crane Features Assure Outstanding Operation

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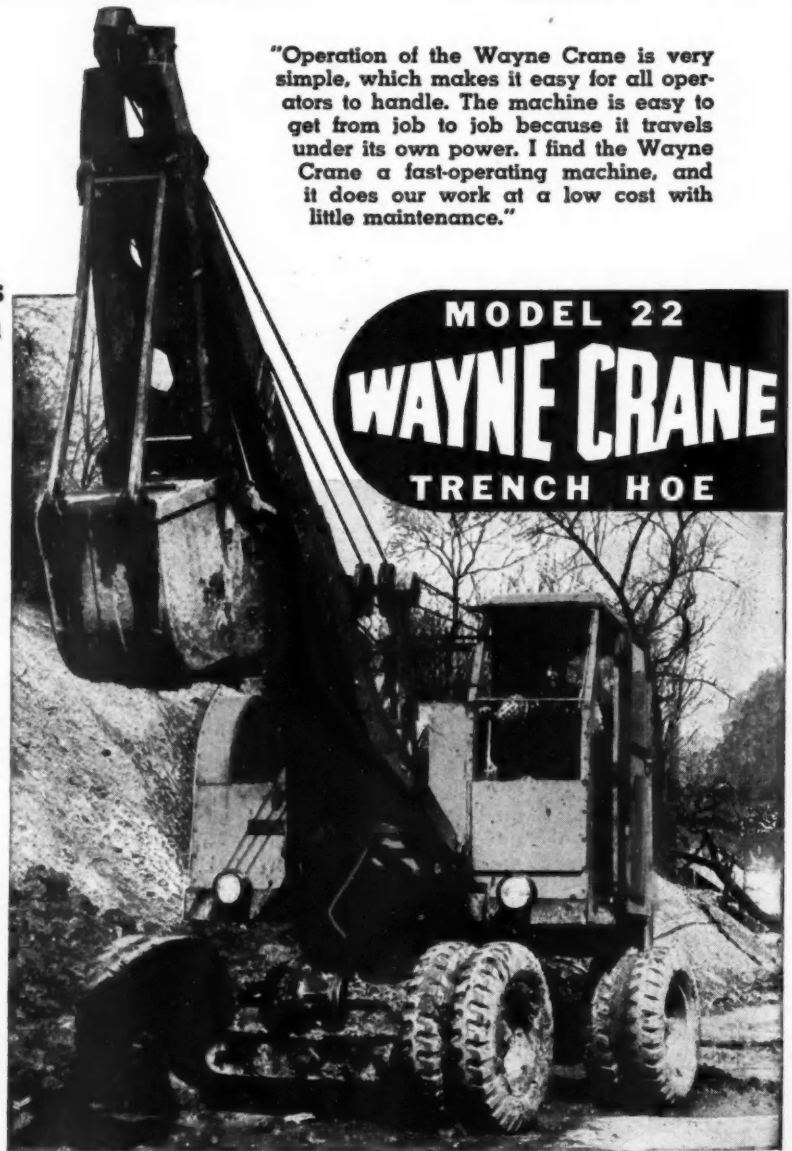
- Single Engine Power
- 4-Wheel Drive
- Full Functioning
- 360° Operation
- Hydraulic Steering
- All-Welded Chassis
- Oversize Drums and Clutches
- Anti-Friction Bearings
- Enclosed Gears
- Full-Vision Cab

ILLUSTRATION: Operator "Bill" Nigro, of Pavia Construction Co., Pittsburgh, traveling to a new job.



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DRAGLINE • CLAMSHELL • UTILITY
CRANE • MAGNET CRANE

MOBILITY *plus* POWER

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NEW MACK hauls 22½ ton pay loads

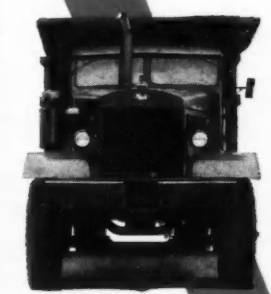
● It's "bottoms up" with heaping loads and "profits up" through low-cost hauling when Mack Model LV takes over on tough excavating and strip-mining jobs.

Clear through, in every part, this big, new Mack is engineered to move more yardage per load and more loads per hour.

There's power in abundance with its 200 h. p. diesel engine. Massive strength in its reinforced, alloy-steel, all-welded frame. Assured traction with Mack's exclusive Power Divider.

Mack Duplex transmission gives added mastery over grades and difficult terrain. Power steering and air assist clutch contribute to easy handling and high maneuverability. Final reduction of full-floating Planidrive type, is strong and rugged without excessive weight. Roomy, all-steel cab has offset driver's seat for better vision; is durably built for long-lasting comfort. Planned accessibility means lower maintenance, easier servicing.

Mack off-highway engineers will gladly advise you on the proper application of Model LV to your particular excavating job. Write or call your nearest Mack branch or dealer.



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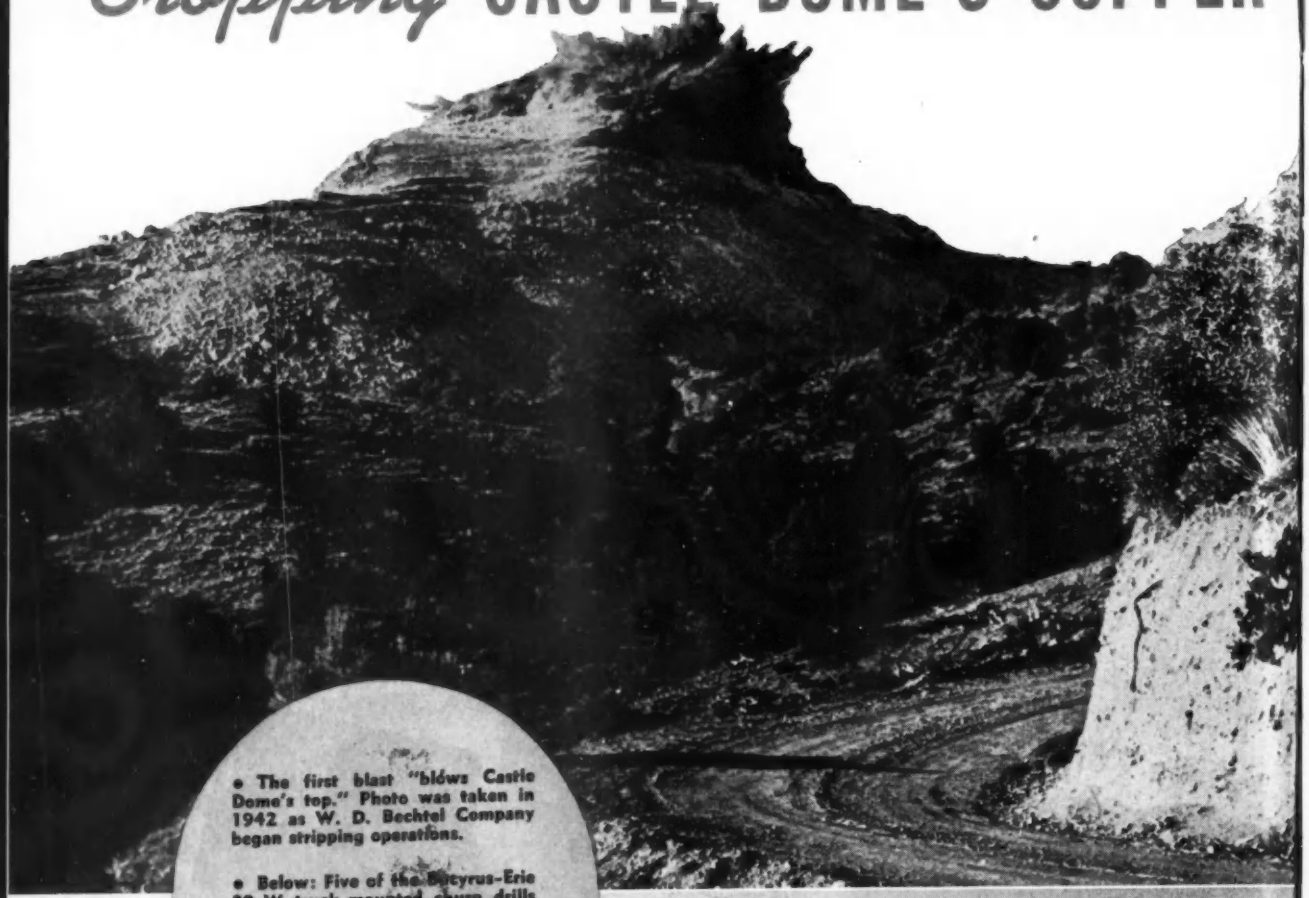
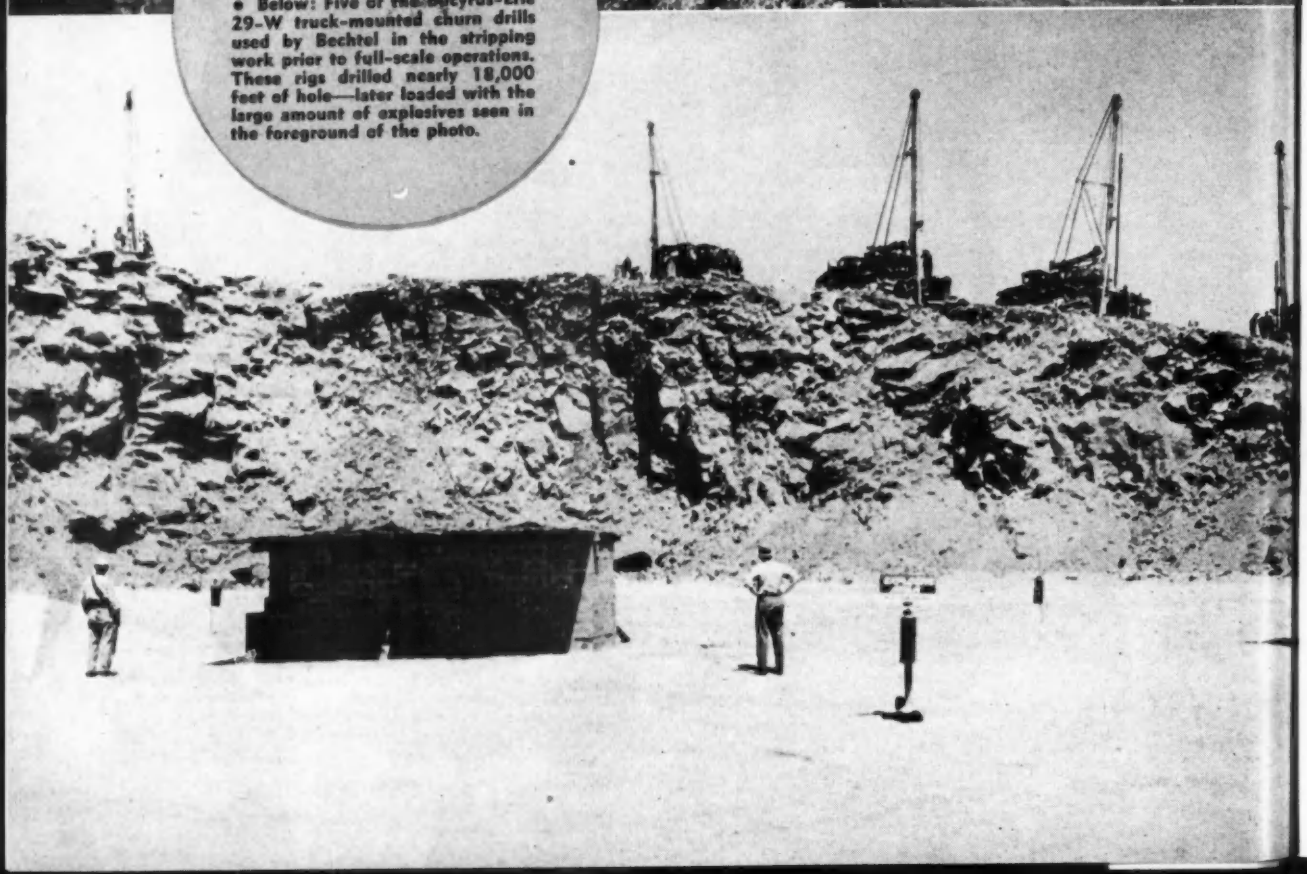
Cropping CASTLE DOME'S COPPER



• The first blast "blows Castle Dome's top." Photo was taken in 1942 as W. D. Bechtel Company began stripping operations.

• Below: Five of the Bucyrus-Erie 29-W truck-mounted churn drills used by Bechtel in the stripping work prior to full-scale operations. These rigs drilled nearly 18,000 feet of hole—later loaded with the large amount of explosives seen in the foreground of the photo.



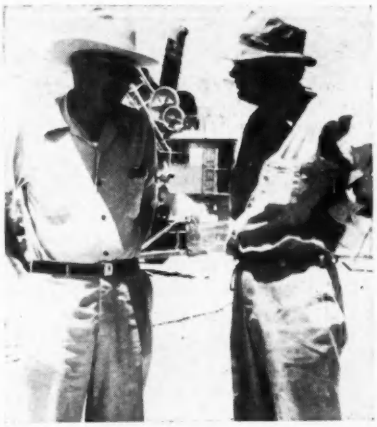
Describing pit work in one of the most important and efficient open-cut copper mines in Arizona — the Castle Dome operation of the Miami Copper Company.

By JOHN L. PARKER

ORIGINALLY considered as a reserve property for future operations, Miami Copper Company's big hill deposit —"Castle Dome"—was quickly brought into production in 1943 to meet urgent wartime requirements. Continuing strong demand for copper has since kept the operation at peak capacity. The deposit lies four air miles west of the company's headquarters in Miami, Arizona, and is worked by a subsidiary—Castle Dome Copper Co., Inc.

The property was opened for the Company in January, 1942, by W. A. Bechtel Company, San Francisco, Cal., which stripped nearly 14,000,000 tons of waste and stockpiled 473,000 tons of ore before turning the operation over to Castle Dome in April, 1943. Bechtel also delivered a turn key job on a 10,000-ton daily capacity selective flotation plant and built a four-mile paved road from the site to the turnoff on U. S. 70, some five miles west of Miami. Since then, various changes and improvements in the mill have built daily tonnage to 12,000 or better.

The benching operation at Castle Dome is interesting because of the many problems involved in selective mining of a great body of low-grade disseminated copper ore. Careful prospecting is required to maintain the grade of ore within the limits of feasible



• Mine Superintendent, J. C. Van De Water (left) and John Gray, pit foreman, discuss the day's business.

• Below: Shovels and drills (top left of photo) work far above offices and shops in this remarkable photograph of Castle Dome. The entire hill will not be removed since most now remaining is uneconomical low-grade ore.

Fred D. Beneke

Death claimed Fred D. Beneke, secretary of the Mississippi Valley Flood Control Association and manager of the Associated General Contractors office at Memphis, Tennessee, August 3. He was 62, succumbed to a heart attack after hospitalization for a virus pneumonia infection.

Mr. Beneke came to Memphis from his home town of Clinton, Missouri. He first reached prominence as a member of the staff of the Memphis Commercial Appeal. Best remembered of his newspaper reports was an account of a train wreck over 30 years ago in which he observed bodies of those killed being removed by undertaking firms while the injured still remained in the wreckage. His news story is credited with initiating efforts which were soon successful in establishing an adequate ambulance service in the area.

As a newspaperman, Mr. Beneke became interested in flood control drainage and reclamation. He took a hand in rousing the public to demand that Federal funds be used to solve the national problem of Lower Valley Floods. Soon becoming active in the Southern Alluvial Land Association, he was one of the organizers of the Flood Control Association of which he became secretary in 1922.

Before becoming associated with the AGC in 1931, Mr. Beneke served successively as assistant to the president and advertising manager of the Memphis Bank of Commerce & Trust Co., and as southern manager for the Woods Construction Co., of Lincoln Nebraska. Named to the flood control post in 1936, he was also secretary of the National Rivers and Harbors Congress in Washington.

Mr. Beneke was a Rotarian, having served as president of the Memphis group in 1927. He was also a member of the Gavel Club, the Shrine, and of Calvary Episcopal Church. Surviving are his widow, Margaret, and two sisters, Miss Alice Beneke and Mrs. John O'Keefe, Carthage, Missouri.

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exploitation. Superficially a huge benching job, actual mining involves careful working of selected ores not only to secure the maximum return, but also to maintain a balanced program which will permit the economy of exhausting adjacent areas simultaneously.

Nature of Deposit

Dominant characteristic of the mining operation is its restriction by a Dome fault which divides the ore body into two parts. The ore east of the fault is soft, fractured ground with chalcocite dominating the copper-bearing minerals. Ore in the west end of the benches and the one pit now started is hard with stubborn toes in which chalcopyrite is the principal source of metal.

The orebody is a blanket formation in quartz monzonite porphyry with principal values in copper sulphides. Mineralization is related to all low-grade copper deposits in the area, the accepted theory being that older formations were intruded by the Schultze granite providing avenues for secondary enrichment along contact.

The orebody was known for 75 years although development was more or less checkered until undertaken by Castle Dome. Benches have 45-ft. faces and are approximately 800 feet wide. Currently, two benches are being worked on the Dome proper while a third bench is being developed in a new section of the property. This bench is still in the stripping stage.

Blast Hole Drilling

Blast holes are drilled by a battery of seven Bucyrus-Erie 29-T churn drills powered by 25-h.p. 3-phase 440-volt Westinghouse and General Electric motors, and swinging a maximum of 2800 pounds of tools on a 7/8-in. drill line. A 9-in. bit is used with two 10-ft. x 6½-in. stems and an openside swivel wire rope socket.

Drill footage per shift varies from 150 feet in the soft ground east of the Dome fault to as low as 30 feet in the hard ground to the west. Bits are sharpened every 10 to 80 feet of use. Mine Superintendent J. C. Van De Water explains that bits are not allowed to go to less than 8½-in. diameter before resharpening. This practice "ensures keeping the hole to full size to the bottom, slightly increases drilling speed, and virtually eliminates stuck bits and costly fishing jobs."

In the softer areas, blast holes are located with a toe distance of 12 to 13 yards, 7 to 8-yd. spacing and drilled to 50 feet—five feet below grade. This pattern gives excellent fragmentation with powder factors ranging from ½ to 5/8 lbs. per cu. yd. Using sprung holes in the primary cut in this area (when breaking to the natural ground slope), toes as long as 30 yards have been effectively broken. In the area west of the fault, toes vary from 10 to 12 yards, spacing from five to seven yards, and holes are drilled to 52 feet, (seven feet below grade).

Select Best Line Length

After trying drill line lengths of 150 to 250 feet, 180 feet was selected as the most economical length for this work. Drill lines are resocketed every 20 shifts, and after 40 shifts each line is reversed and used to failure. The drill crew consists of the drill boss, seven drillers, seven helpers, one mechanic and his helper, two pipemen, bit truck driver and helper, bit shop boss, bit dresser, temperman, and one man on casing salvage.

Bits are sharpened on a Bucyrus-Erie No. 12 bit dresser located in the company bit shop—also equipped with two oil furnaces for heating and tempering, and a water quenching bath. Bits are transported by a 1½-ton flat rock truck with a chain hoist on on overhanging horizontal I beam. Grease and oil are delivered to the drills by a grease department service truck which also services other mine equipment. All repair work is done in the field by the mechanic and helper.

Operating Data Summarized

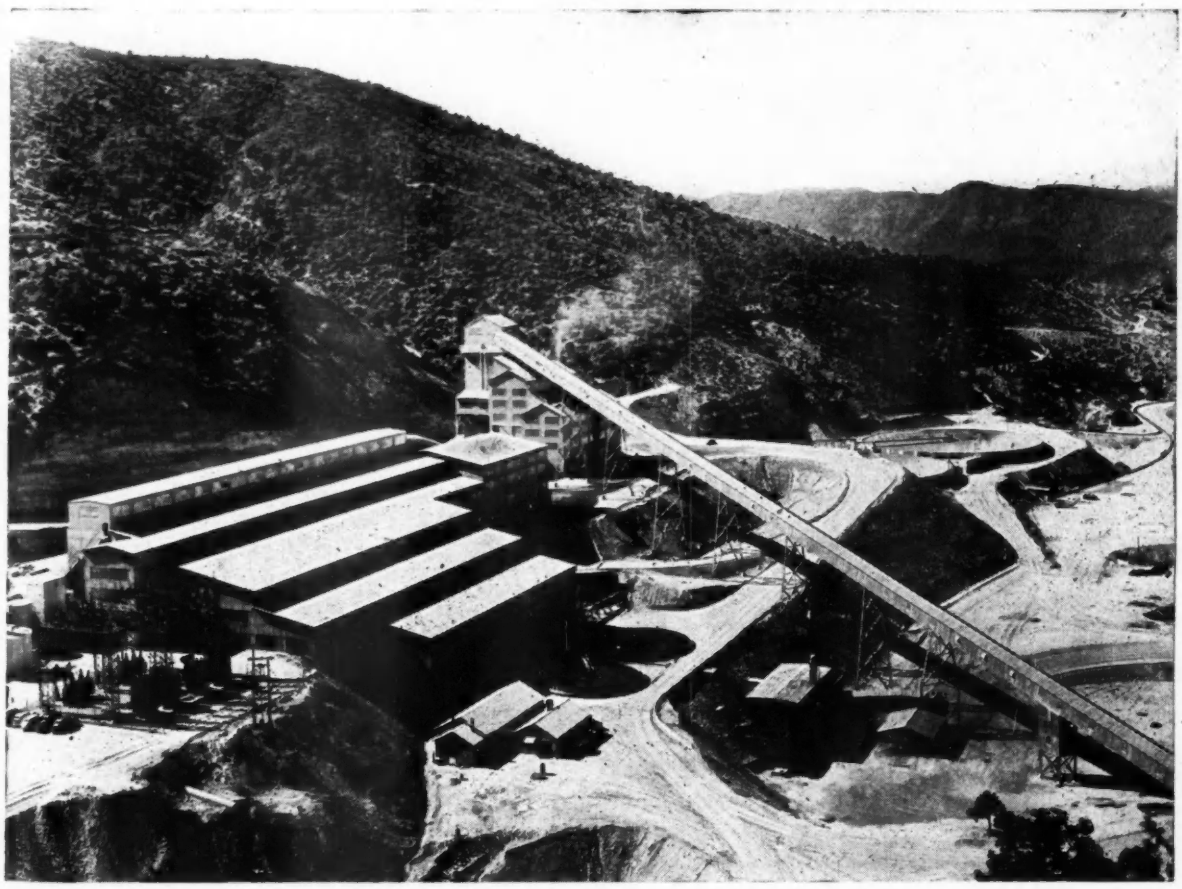
Tons of ore mined per day	12,000
Tons of waste mined per day	13,000
Tons of ore mined daily per operating employee	200
Feet drilled per churn drill shift	76.8
Feet per man shift in drill crew	28
Feet drilled per bit change	63
Sharpenings per bit	72
Pounds of powder charge per hole—average	620
Tons of rock broken per hole	3,000
Tons of rock broken per pound of powder	4.5
Tons of ore mined per shovel shift	4,800

Holes are dried out by bailing those with three or more feet of water and burning out those with less. Bag powder can then be poured around the primer cartridges to completely fill the hole. This allows placing 70 pounds of powder in 18 inches of hole instead of the usual 50 and leaves no air space. A further refinement recently put into practice is cutting up stick powder before lowering so that it more effectively fills the hole. This has proven to be a highly satisfactory method of breaking out hard toes at low cost.

Blasting Procedure

Explosives are all Arizona-manufactured "Apache." In softer material, 8 x 18-in. cartridges of 40 per cent gel. with dynamite primers and free-flowing 40 per cent No. 3 bag powder are used. In harder areas west of the Dome

• Ultimate destination of 12,000 tons of ore mined every day at Castle Dome is this crushing and concentrating plant—considered one of the most modern in the West—located on the south side of the Dome. The long conveyor takes ore to the secondary, where material is reduced to 5/16-in. after passing through two 7-ft. Symons cone crushers and two Symons shortheads. Concentrates are taken to a smelter at Miami by truck and train.

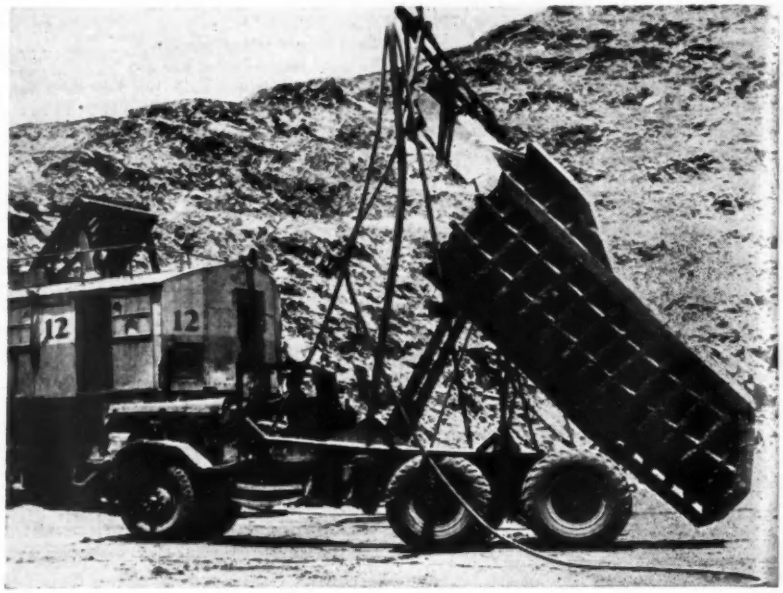


fault, 8 x 18-in. cartridges of 60 per cent gel, free-flowing 70 per cent LDX-705 bag powder, and dynamite primers are employed. The loading factor varies from ¾ to 1 lb. per cu. yd. Occasionally deck charges, in addition to the calculated charges, are used to aid fragmentation.

The blasting crew—consisting of a powder boss, three loaders, a powder truck driver, and a stemming truck driver—can load and blast up to 30 holes in an 8-hour shift, although the average shot is from 10 to 20 holes. This crew also does all mudcapping of boulders for secondary blasting, assists in loading and blasting of grade holes, delivers powder from railroad cars to magazines, and keeps powder and cap magazines in order.

While at first considered too expensive for this type of operation, mud capping was undertaken successfully in 1946 using a shaped powder charge resembling an old-fashioned beehive in form. During the past few months, the cost has been dropped to under 50 cents per boulder by switching to Army M-1 demolition powder. This explosive has been found to be very fast and to produce a minimum of noise and concussion. Its fumes appear to cause no headaches.

Drills operate one shift a day, six days a month. Last May (a representative month), 13,257 feet of hole were blasted, averaging 62.2 tons per foot of hole, and 4.51 tons per pound of powder. This supplies sufficient broken material for 63 shovel shifts (5-yd. shovels) per week.



• Special peak extension added to dump body fronts on the Knuckey's enables trucks to pick up cable bridges and shift them for shovel move-ups. Bridges are built in Company shops from old pipe.

Three 5-yd. Marion 4161 electric shovels with Westinghouse motors and controls are operated three shifts a day to handle an average 4800 tons of blasted material each per shift. Average weekly ore and waste production is 175,000 tons.

The shovels load to a fleet of 13 Knuckey 30-ton dump trucks powered by 150 h.p. Cummins diesel engines. These trucks average 30 tons per trip hauling to a 1000-ton hopper at the crusher. Normally, five trucks serve each shovel on the usual 1.86-mile round trip, averaging 1065 tons (450 ton miles) each per 8-hour shift. Where hauls are longer (up to 4,000 feet), six or seven trucks may be used.

Ore is fed to a 9-in. grizzly from the truck-dump hopper by a 10-ft. 6-in. by 23-ft. Stephenson-Adamson pan feeder. Undersize by-passes the crusher and the remainder is broken to minus 8-in. in a 66 x 84-in. Allis-Chalmers jaw crusher powered by a 300-h.p. Westinghouse motor.

A 48-in. Goodrich belt conveyor then carries the ore at 450 fpm, 1100 feet across a canyon to a secondary two-stage crushing

"Then I say to myself, what the blazes is the difference — he's one of the fastest workers I've got!"

plant at the head of the ball mill circuit in the 12,000-ton selective flotation circuit. This conveyor lifts the material 190-feet on a 12-in. incline by means of a dual drive—a 200 h.p. motor on the head and a 100-h.p. motor on the tail.

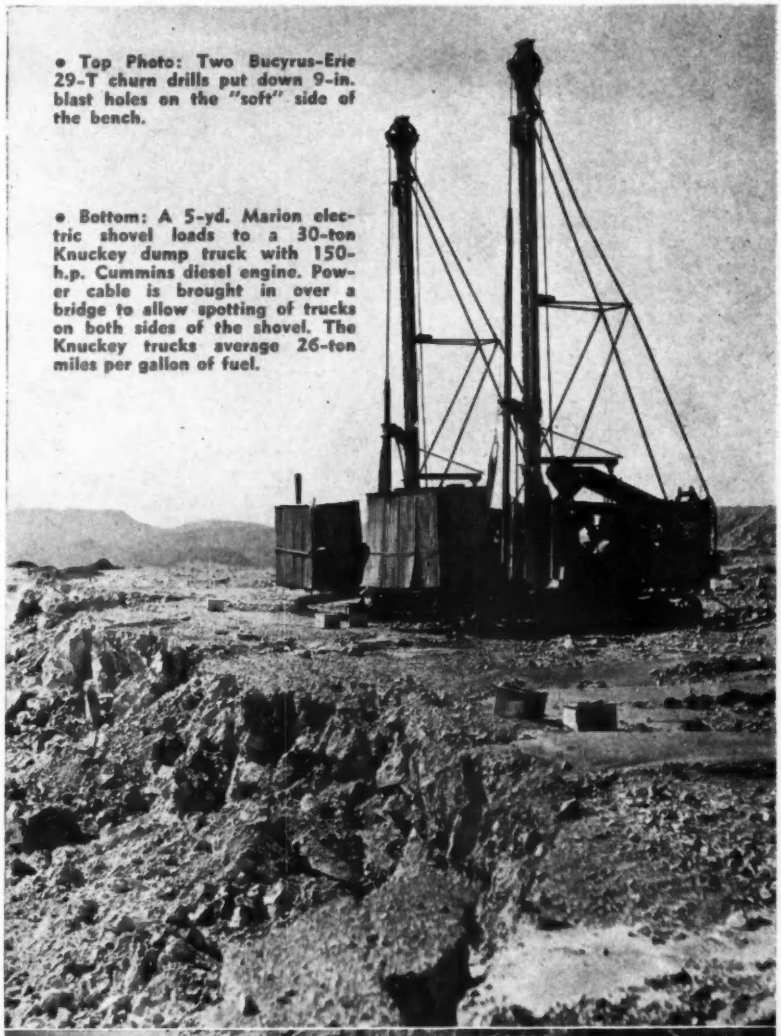
Ore from the secondary crushing plant is stored in a 14,500-ton mill bin after flowing over Toledo Chronoflow scales where it is weighed continuously. Taken from the bin as needed, the material is fed for fine grinding to seven 10-ft. 6-in. x 11-ft. Allis-Chalmers ball mills powered by 600-h.p. Westinghouse motors. The material then goes to the concentrator where sulphide copper particles are separated from the waste material by a selective flotation process. Concentrates are then shipped to the Miami plant of the International Smelting & Refining Company where copper blister is produced.

Cleanup work in the pit is handled by a 2½-yd. Northwest 80-D diesel shovel loading to four 15-ton Euclid dump trucks and six Caterpillar RD-8 tractors with LeTourneau bulldozers. The bulldozers are also used part-time for road construction and for moving the seven sled-mounted transformer banks which supply power to the shovels.

Pit and haul roads—totalling about 3600 feet in length—are kept in top condition by a Caterpillar M-8 road patrol and are well watered to keep dust to a minimum.

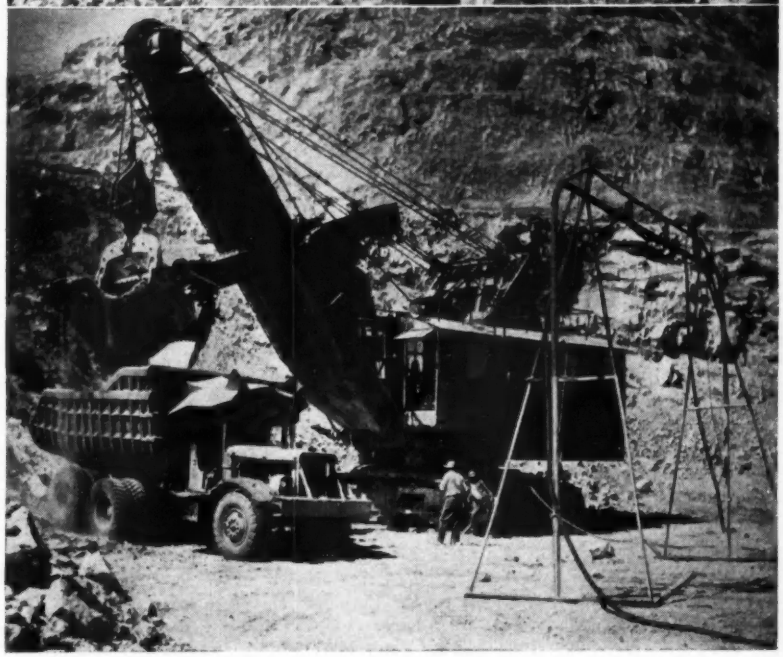
To date, over 58,000,000 tons of ore and waste have been excavated, hauled, and processed at this mine in four years with an average working force of 140 men. During the war, Castle Dome accounted for approximately 10 per cent of the copper produced in Arizona.

Operating officials of Castle Dome, Inc., include R. W. Hughes, general manager, B. R. Coil, general superintendent, J. C. Van De Water mine superintendent, C. B. Hostetler, chief engineer, L. W. Bowling, master mechanic, C. S. Black, churn drill supervisor, G. J. Thames, blasting supervisor, and M. M. Stover, drilling and blasting foreman.

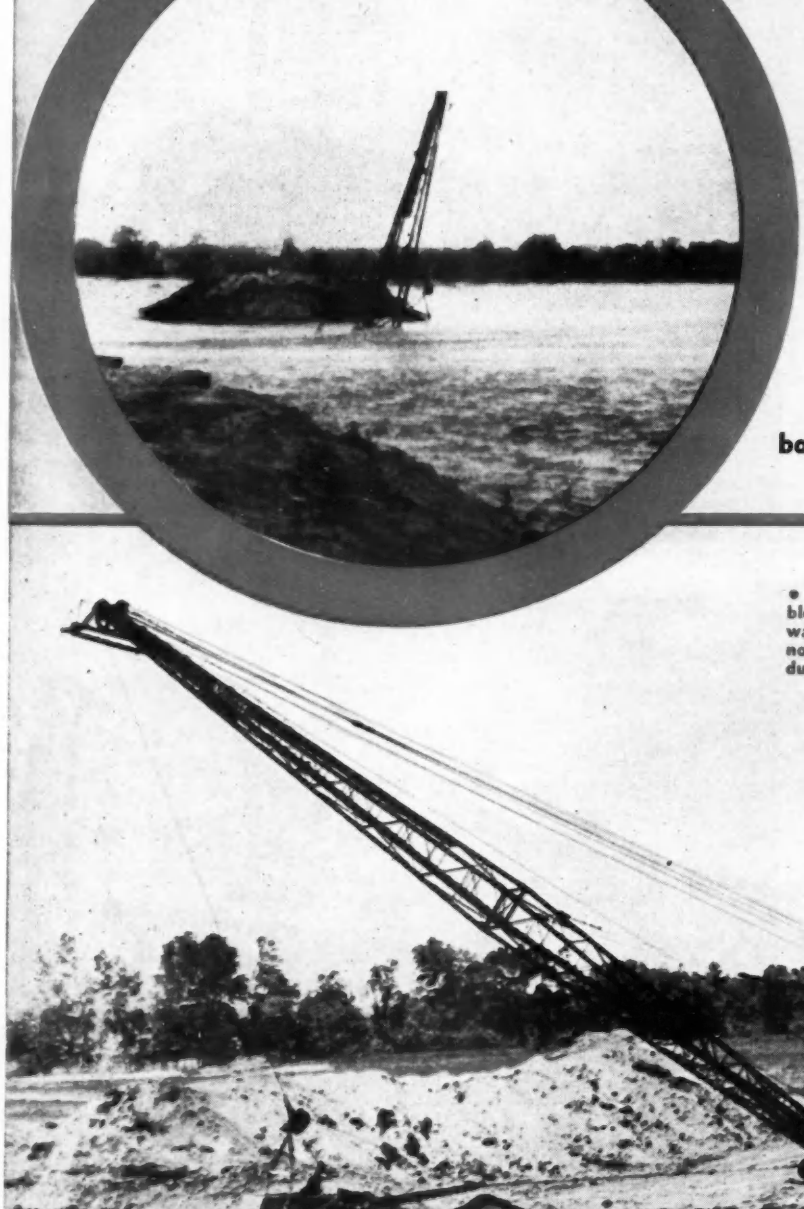


• Top Photo: Two Bucyrus-Erie 29-T churn drills put down 9-in. blast holes on the "soft" side of the bench.

• Bottom: A 5-yd. Marion electric shovel loads to a 30-ton Knuckey dump truck with 150-h.p. Cummins diesel engine. Power cable is brought in over a bridge to allow spotting of trucks on both sides of the shovel. The Knuckey trucks average 26-ton miles per gallon of fuel.

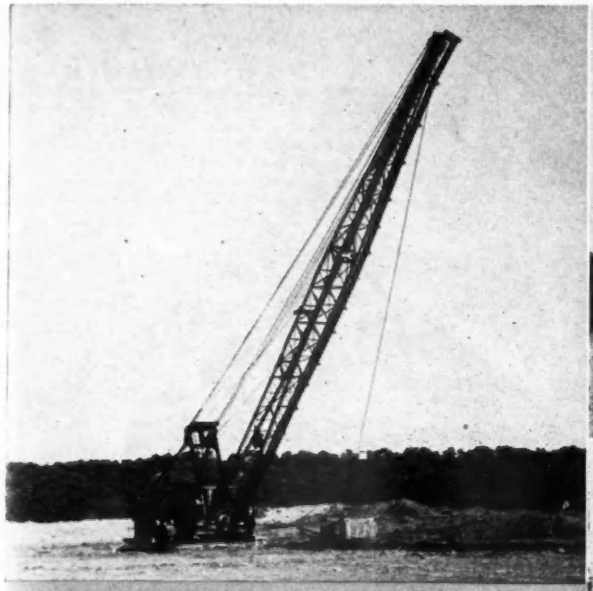


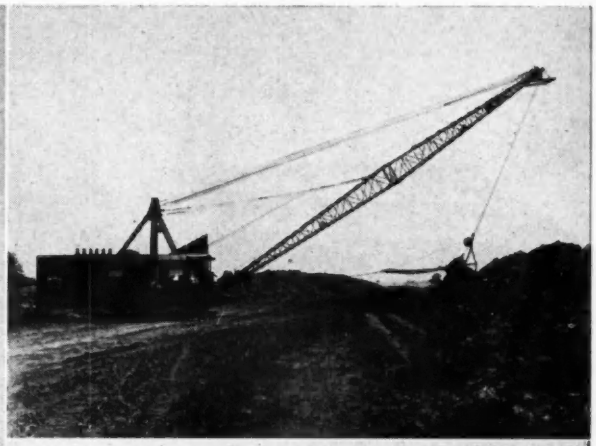
The Case of the Drowning Dragline



There's a story behind the story of the levee-building project of S. W. Hardwick Co. at Prairie du Rocher, Ill., and that's the one about the dragline that came back from a watery grave.

• (Above) With only its boom visible, the 5-W dragline seems in a bad way, but (Below) it's back at work, none the worse for its unscheduled ducking.





• (Above) A 3½-yd. 3-W walking dragline uses its bucket to scarify the levee base before digging in, near Fountain, Ill.

• (Above right) Two of these Bucyrus-Erie 5-W walkers with 6-yd. buckets are building a levee near Prairie du Rocher, Ill.

• (Right) General view of the three-mile section of levee being built by S. W. Hardwick Co. near Prairie du Rocher.

TWO Bucyrus-Erie 5-W diesel walking draglines are handling the levee construction work undertaken by S. W. Hardwick Co. at Prairie du Rocher, Ill., which is one item in the Harrisonville & Ivy Landing Drainage and Levee project. The whole project involves building a continuous levee from Fountain, Ill., to Prairie du Rocher—a distance of about 35 miles—with excavation totaling 25 million yards. The item at Prairie du Rocher includes about three miles of levee and approximately 900,000 yards of excavation, 50% of which is rehandled.

The two 5-W's were partners in another item of work contracted by the Beardstown, Ill., firm at Fountain Creek outlet, where 1,510,000 yards were to be moved, and it was here, in May, 1947, that one of the machines was submerged when the levee broke under it. The 5-W sank under the swirling waters until only the tip of the 120-ft. boom was visible. When the river finally receded, the dragline was 40 feet below the natural level of the ground, with the engine room buried under five feet of sand and muck.

Dragline to Rescue

The problem of extricating the dragline was handled by the other 5-W. By stringing a cable from it to the A-frame of the mired machine, the latter was tipped so sand could flow underneath, raising it slightly. Then the second dragline was walked to the opposite side and the process repeated to tip the bogged-down machine the other way. By this means, the dragline was eventually freed, sustaining no more structural damage than a slight bending of one of the A-frame members, which was easily straightened.

Fortunately, no sand had entered the Fairbanks-Morse diesel engine, and a simple cleaning fitted it again for service. When the electrical system was checked and rewired as necessary, and the sand hosed out of the engine room, the 5-W went back to work and has been performing satisfactorily ever since. It had been out of action six weeks.

At the time of the EXCAVATING ENGINEER representative's visit to the Prairie du Rocher job, work had been in progress for a month, and 260,000 yards of earth had been moved in 26 working days, with the draglines maintaining a 24-hour schedule. The draglines are assisted by a Caterpillar D7 bulldozer used to clean up the right-of-way and dress the levee, and a Ford rubber-tired tractor which plows the levee base by scarifying it to a 6-in. depth. Each of the 5-W's carries a 6-yd. Hendrix perforated bucket.

Working on S. W. Hardwick's item at Fountain is a Bucyrus-Erie 3-W walking dragline with 3½-yd. Hendrix perforated bucket, and two Caterpillar D7 cable bulldozers plus a scraper.

• Aerial view of the Raleigh end of the 2.16-mile project shows the paving operations nearing completion on the new (right) lane of dual highway 64. Subcontractor Ballinger Paving Company's Koehring finisher is in foreground. The road at right is a farm-to-market highway which rejoins 64 about 10 miles out.

Reworking the Raleigh Road

Nello L. Teer Co., Durham, N. C., has completed a quarter-million-dollar rebuilding job on two miles of Raleigh's most heavily travelled road—U. S. 64. Excavation ran to 76,700 cu. yds.

By JOHN M. GREGORY

AMONG North Carolina's toughest highway jobs of recent months was the modernizing of 2.16 miles of U. S. 64, which as part of the main artery between New York City and Miami carries a record traffic load for the Raleigh area. Converting an 18-ft. slab to a divided highway with two 22-ft. lanes, regrading, eliminating curves—and at the same time maintaining heavy traffic in difficult weather, were some of the problems faced by the contractor.

Nello L. Teer Co., Durham, was awarded the contract for this work July, 1947, on the company's low bid of $259,209.40. Included were clearing of eight acres, grubbing five acres, 76,700 cu. yds. of unclassified excavation, 1020 cu. yds. of soil-type base course, and 43,520 sq. yds. of concrete paving (sub-contracted to Ballinger Paving Company of Greenville, S. C.).

Clearing work started early in August between stations 48 and 78 (100-ft. stations started at the city end of the project and ran westward), 3,000 feet north of the old right of way to eliminate a curve. Another curve elimination between stations 90 and 102 required clearing 1,200 feet south of the old road.

Clearing Largely By Hand

Much cutting and removal of brush and trees (except those designated as shade trees for landscaping) was required. This was largely hand work. Trees were felled with axes and hand saws and pushed off the right of way with Cat-powered LeTour-

neau XD and AK dozers. All timber belonging to property owners had to be cut into 8 and 10-ft. lengths and stacked.

Stumps and roots were grubbed to a depth of not less than two feet below subgrade, shoulder, and finished slope elevations. A few large trees, some 36 inches in diameter, were removed by cutting and blasting roots. All unwanted timber was either burned or dumped in an adjacent area.

Eight buildings, including a gas station complete with grease pit, and a cold storage plant, had to be moved from the new right of way. A 34 x 34-ft. cold storage building—located near the Raleigh end of the project — remained filled with frozen and stored food throughout moving operations. Special flexible connections maintained constant power and water supplies to the building. In addition to the main storage building, a 12 x 22-ft. power house, a 12 x 16-ft. office, and a 12 x 34-ft. shed had to be moved and reset.

After excavating under floors (some of them 14-in.-thick concrete) and placing steel beams, buildings were moved on rollers. This excavation was done by a 2½-yd. Northwest 80-D shovel, and the LeTourneau dozers performed grading required for the moving operations. About 100 jacks, 200 wooden rollers, and a large number of lengths of 6-in. pipe were used.

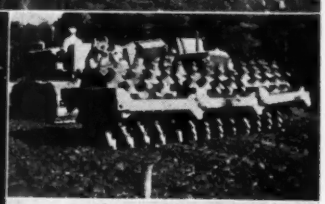
Find Varying Formations

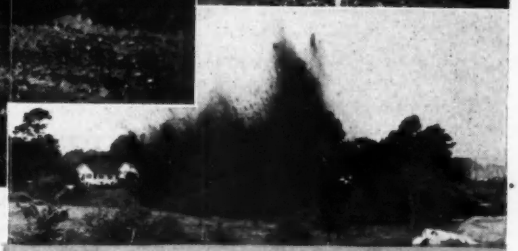
Excavation of the right of way followed about 500 yards behind clearing. Varying formations were found under an average 6-in. top soil, including firm sand clay, and clay with heavy inclusions of mica. Blast holes, where necessary, were put down by a Gardner-Denver wagon drill with Timken bits, and powered by a Jaeger 105 air compressor.

The 2½-yd. Northwest 80-D shovel and a JDX Gradall 2400 loaded earth and blasted rock to four Cummins-diesel powered Euclid trucks — two rear and two bottom dumps. Tractor equipment included (in addition to the two dozers mentioned previously) two Caterpillar D-8 drawn 12-yd.

• Job personnel included (top photos, from left) Teer Company's Job Superintendent George Johnson; N. C. state highway man J. W. Ferguson, resident engineer, J. H. Burris, instrument man, and Munn McLean, senior inspector; and C. H. Payne, grade foreman for Teer.

• Right: 2½-yd. Northwest 80-D shovel loads blasted rock boulders at station 103 to 12-yd. Euclid dumps. Haul here was ¼-mile to a subdivision fill.





• Above Left: Cummins-diesel-powered 12-yd. Euclid wagon puts down fill at station 90 for dozer (background).
• Center Right: 3-in. subgrade reinforcement is compacted by a 3-section LeTourneau sheepsfoot roller drawn by a Caterpillar D-8 tractor.
• Above: Blasting outlet ditch for muddy area between stations 26 and 90.
• Left: The blasted ditch immediately starts draining off water so that excavating equipment can go to work.
• Below: Tamping charge of Atlas blasting powder in 1½ x 16-in. hole drilled in 10-ton rock by the Gardner-Denver wagon drill at station 104-50.

LeTourneau scrapers, and a LeTourneau 3-section sheepsfoot roller drawn by a Caterpillar D-8.

When excavation reached sections 90 to 100, unexpected hard rock was found occurring in large boulders—some 7 to 13 feet thick. These were drilled with 1½-in. Timken bits by the Gardner-Denver wagon rig and blasted with Atlas 40% gel, a stick or two to a hole. Where the old road was above the new grade, pavement was drilled and shot in the same manner.

Broken rock and concrete in this area was pushed off to the nearest road fill by the dozers. Amounts in excess of those required to bring fills to within 12 inches of grade were shovel-loaded to the Euclid trucks and dumped in a nearby pond being filled for a real estate development.

Wet Mud Presents Problem

About midway in the project, the excavators ran into a thick mud kept saturated by underground springs and almost impossible to handle. This area was soon dried by a drainage ditch excavated by blasting. Lowering of grade at one of the curves in order to improve sight distance required about 19,000 cu. yds. of excavation. Nearly all of this material was used in nearby fills.

About 3,797 feet of concrete pipe were laid in sizes ranging from 18 to 48-in. during installation of drainage facilities. Trenches were excavated and pipe sections handled by two cranes: a ¾-yd. Lorain truck-mounted clamshell and ¾-yd. Northwest 25.

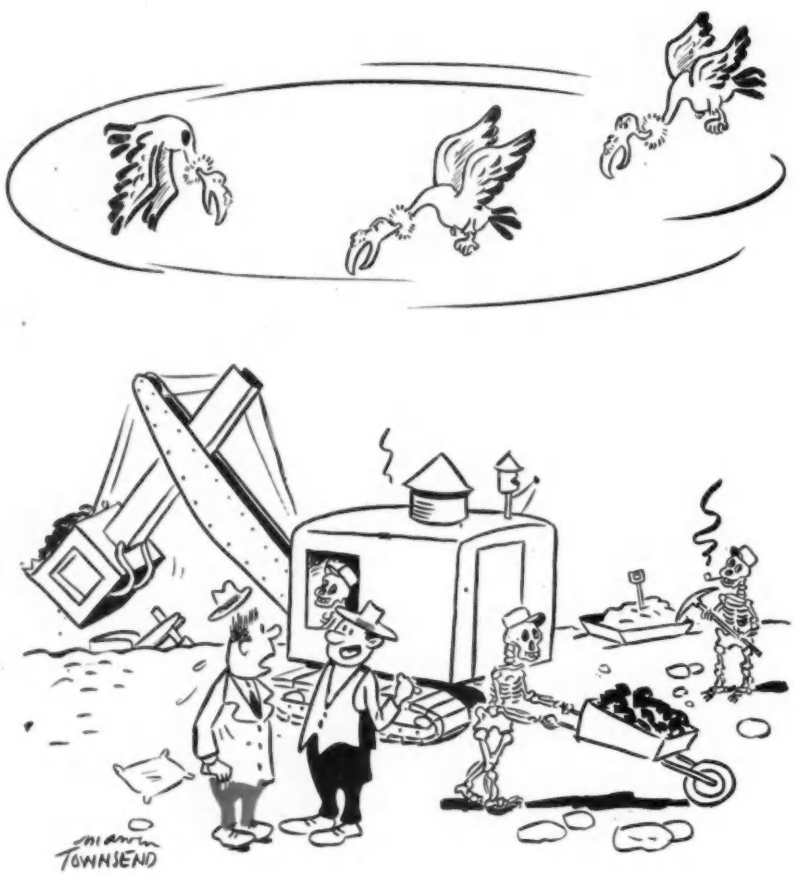
Fills were built up in 6-in. layers by the trucks, scrapers, and a Caterpillar 12 motor grader. Fills were rolled every layer with two passes of the sheepsfoot on each 6-in. lift.

Where the grade of the old 18-ft. road was satisfactory, it was widened by adding a 4-ft. strip. The new 22-ft. lane is separated from the old by a 22 to 40-ft. median strip. This strip and all shoulders were planted with grasses as part of the work under the contract. Throughout the project, the two lanes are within 1½ feet elevation of each other. The concrete—43,000 cu. yds.—was laid in an 8-in. thick strip over a 3-in. insulating subgrade.

Traffic Maintenance Difficult

Perhaps the greatest difficulty encountered was the maintenance of traffic on this cross-country highway throughout construction operations. Piece patching was resorted to where practical and traffic often flowed over temporary dirt passes from lane to lane. Luckily there were no high fills or deep cuts and detours could be kept to a minimum. The new road had become a "must" with the great increase in traffic, according to J. W. Ferguson, resident engineer for the State of North Carolina. "The time came when it had to be done, so we did it," reports Mr. Ferguson. Other state men on the job included Munn McLean, senior inspector, F. D. Holding, junior inspector, and J. H. Burris and W. E. Mitchem, instrument men. W. E. Hawkins is state construction engineer and E. A. Crump, assistant division engineer in charge of construction for the 4th Division, with headquarters at Wilson.

Nello L. Teer Co., Durham, is one of North Carolina's leading contractors, has built many of the state's roads and airfields. Nello L. Teer is president; Nello L. Teer, Jr., vice president; and Dillard Teer, secretary and treasurer. General superintendent of the U. S. 64 job was George Johnson, who has been with Teer for 29 years. C. H. Payne was grade foreman, Jim Plott, shovel foreman, and Fred Foster, clearing foreman.



"We just have a skeleton crew working today!"

PENBROOK GETS *TWICE* THE SERVICE FROM J&L *Precisionbilt* WIRE ROPE

J&L STEEL

....average life jumps from 382 hours to 805 hours, removing 100% blasted rock!

The J&L Precisionbilt *wire rope used for the dragline on this machine: 1¾" diameter, 6x19 Type "U", Lang Lay with independent wire rope center.*

RECORDS kept by Penbrook Contracting Company over a period of 20 months on an anthracite strip-mining job near Ashland, Pa., show that J&L *Precisionbilt* wire rope has given more than *twice* the service life of two major competing brands.

Average life of 9 brand "A" wire ropes:	**397.6 hrs.**
Life of 1 brand "B" wire rope:	**240 hrs.**
Average life of all 10 wire ropes:	**381.8 hrs.**
Average life of 6 J&L Precisionbilt wire ropes:	**805 hrs.**

As a result of this performance, Penbrook now uses a variety of J&L ropes on its 21 draglines and shovels engaged in two hard coal stripping operations in Schuylkill County, Pa., and six soft coal jobs in Clearfield County, Pa.

This is a typical example of a quality product, correctly applied and properly handled—a combination without which this advertisement could not have been written.

There is a J&L *Precisionbilt* wire rope for every purpose. Why not make your own comparison. We'll gladly send you wire rope service-record cards and a transparent holder *free*.

Jones & Laughlin Steel Corporation
429 Jones & Laughlin Building
Pittsburgh 19, Pa.

Please send me a supply of wire rope service-record cards and transparent holder.

NAME_____

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JONES & LAUGHLIN STEEL CORPORATION

Equipment you ought to KNOW ABOUT

Portable Gravel Plant

Manufacturer: Iowa Manufacturing Co., Cedar Rapids, Iowa

Claims: A new portable screening and loading plant, for use in aggregate producing operations in which a crusher is not needed, has just been announced. It consists of a Cedarapids heavy-duty double-deck horizontal vibrating screen, three folding type channel frame conveyors, and an apron feeder with charging hopper and grizzly, all mounted on a pneumatic tired transport truck. Power required: 40-50 h.p., with clutch and power take-off shaft, governor set at 1,200 rpm full load.

This new plant is said to be able to handle either gravel or rock from pit, quarry, or stockpile, size it to specifications, and load it quickly onto trucks, bins, or stockpiles.

Sand & Gravel Pump

Manufacturer: The Kansas City Hay Press Company, 801 Woodswether Road, Kansas City, Missouri.

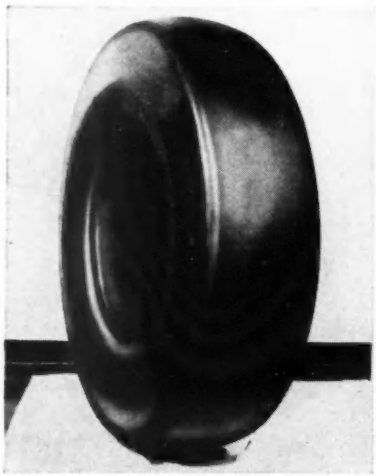
Claims: The new "Lightning" sand and gravel pump is designed for long life under tough working conditions. All wearing parts of the unit are cast of a new alloy called Hi-Chro-Hi, a white, semi-steel.

Disassembly and parts replacement are said to be easy, because special design eliminates the need for bolts to secure back and front side plates. According to the manufacturer, this absence of bolt holes in the shell tends to strengthen and lengthen the service life of the shell. The new design also makes possible the close tolerance of 1/64" between impeller and suction liner, thus practically eliminating the entrance of abrasive materials.

Quarry Tires

Manufacturer: B. F. Goodrich Co., Akron, Ohio

Claims: A new idea in tires for rock quarry service is said to be incorporated in this product. The new tire has an absolutely smooth contour, as contrasted to others made for this field with a wide



variety of treads. Advantages of this construction, the company claims, is that there are no edges or tread grooves to catch on stumps, sharp rocks or other hazards which are liable to cause tire damage.

The new tire is at present being made is two sizes, 9.00-20, 12 ply rating and 14.00-24, 20 ply rating.

Hydraulic System Sludge Solvent

Manufacturer: Swan-Finch Oil Corporation, R.C.A. Building, New York City, New York.

Claims: A new sludge and gum solvent has been developed for the users of hydraulic equipment. the new product, known as Hydro-Solv "A," can be added to regular hydraulic oils to remedy any sluggish operation caused by contaminants.

There is no necessity for cleaning the system after using Hydro-Solv "A." Simply refill and resume production. The product is a liquid concentrate composed of several highly active organic and gum sludge solvents. These compounds have been specially selected to perform specific functions when added to a used oil in a contaminated system.

Hydro-Solv "A" is not a lubricant in itself and hence can not be used neat in a hydraulic system. It is non-corrosive and will not affect fine surface finishes.

According to the manufacturer, the use of Hydro-Solv "A" makes for the following advantages: a clean hydraulic system; long pump and valve life; freedom from jerky feeds, chatter, and vibration; long life of fluid; smoother operation and better control; reduced machine down-time and production loss; minimum labor for maintenance.

Clay Spade

Manufacturer: Le Roi Co., Milwaukee 14, Wisconsin

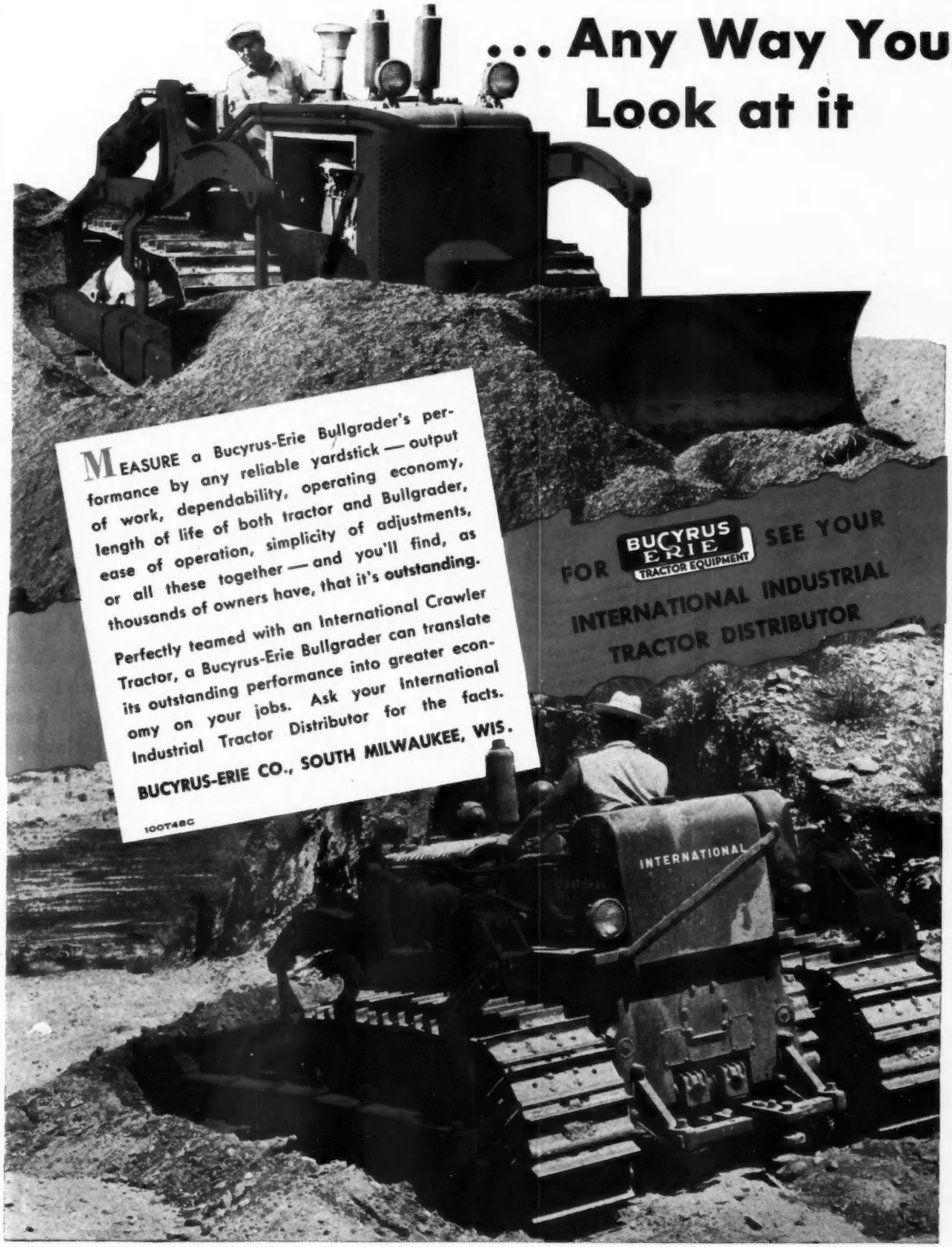
Claims: Designed for ease of holding and to reduce digging and upkeep costs, the new Le Roi

"31" clay spade has just been announced. Weighing only 18 lbs., the new tool is said to enable the operator to do more work with less effort. Also contributing to

(Continued on Page 30)

OUTSTANDING

... Any Way You Look at it



MEASURE a Bucyrus-Erie Bullgrader's performance by any reliable yardstick — output of work, dependability, operating economy, length of life of both tractor and Bullgrader, ease of operation, simplicity of adjustments, or all these together — and you'll find, as thousands of owners have, that it's outstanding.

Perfectly teamed with an International Crawler Tractor, a Bucyrus-Erie Bullgrader can translate its outstanding performance into greater economy on your jobs. Ask your International Industrial Tractor Distributor for the facts.

BUCYRUS-ERIE CO., SOUTH MILWAUKEE, WIS.

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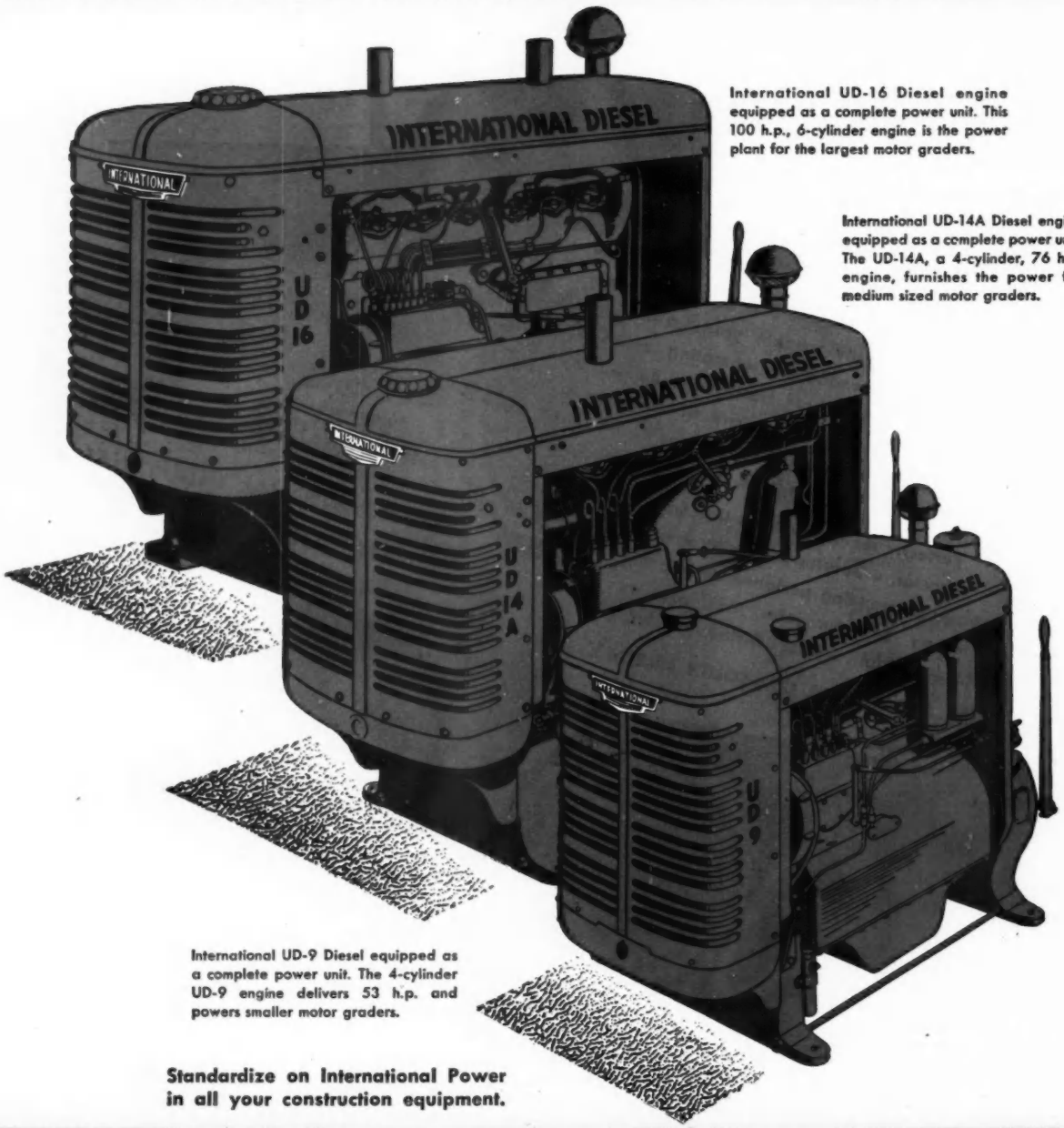
FOR BUCYRUS ERIE TRACTOR EQUIPMENT SEE YOUR INTERNATIONAL INDUSTRIAL TRACTOR DISTRIBUTOR

INTERNATIONAL

Give You Grader Power in Your Program



International UD-16 Diesel engine equipped as a complete power unit. This 100 h.p., 6-cylinder engine is the power plant for the largest motor graders.

International UD-14A Diesel engine equipped as a complete power unit. The UD-14A, a 4-cylinder, 76 h.p. engine, furnishes the power for medium sized motor graders.

International UD-9 Diesel equipped as a complete power unit. The 4-cylinder UD-9 engine delivers 53 h.p. and powers smaller motor graders.

Standardize on International Power in all your construction equipment.

INTERNATIONAL *Industrial*

DIESELS
for Paydirt

For more work done and bigger profits in your pocket, choose motor graders powered by International Diesel engines.

International Diesels give you exclusive, in-built, gasoline-conversion starting—they start in any weather as easily as your car—to get your motor grader on the job quickly. The International Diesel fuel-injection system leads the field in advanced design. A simple, compact fuel pump with a built-in governor and torque control device gives you precision metering of fuel and instant load-grabbing ability with minimum fuel oil consumption. These and dozens of other features make International Diesels tops in productive performance.

Let your International Industrial Power Distributor show you how International Diesels add efficiency to motor grader performance and pay off in production. Here, again, you'll find International Power the essential specification in your program for paydirt.

Industrial Power Division

INTERNATIONAL HARVESTER COMPANY

Chicago 1, Illinois

Power

INTERNATIONAL HARVESTER

(Continued from Page 26)

easy handling is the short 19-in. length.

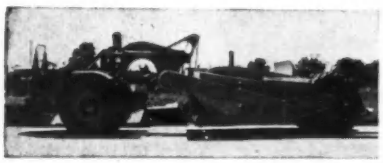
An exclusive built-in oiling system is an important feature of the unit. Oil from a large reservoir in the handle is metered into the live air stream and carried to every working part. According to the manufacturer, this lubrication system, together with a special front-end sealing arrangement to exclude dirt and foreign matter, increases operating efficiency and extends tool life expectancy.

Ten New "Caterpillars"

Manufacturer: Caterpillar Tractor Co., Peoria 8, Illinois

Claims: Ten new units have been added to the "Caterpillar" line. These include a two-wheeled diesel tractor-scraper unit (see illustration); a new four-wheeled diesel tractor-wagon unit; two additional scrapers; four new diesel engines to be made available as industrial power units, electric sets, and completely marined engines; and a fifth new diesel engine integral with the wheel-type tractors.

The construction field is said to have application for the earthmoving equipment in all phases of activity — road building and maintenance, air port construction, dam building, flood control,



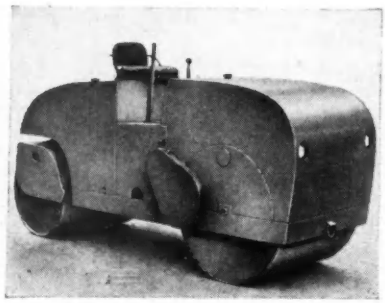
land levelling, railroad off-track maintenance, etc. According to the manufacturer, the engines provide the power answers for crushing plants, ditchers, locomotives, portable power plants, and like installations.

Both of the new earthmoving units — the diesel DW21 with the No. 21 scraper and the diesel DW20 with the W20 wagon—are powered by the new diesel 6-cylinder power plant, providing 225 h.p. at 2,000 rpm governed full load speed. All working speeds are controlled through a foot throttle, while the governor controls speeds at low idle and prevents over-speeding the engine.

Each unit has the "Caterpillar" constant mesh spur and helical gear transmission, pump lubricated, and a 16-in. diameter double plate clutch with semi-metallic friction surfaces, foot operated.

Specifications show that the tractor-scraper combination has an overall length of 39 feet, 7 inches; width of 11 feet, 6 inches; height of 10 feet, 8 inches; and a wheelbase of 24 feet. The cable controlled No. 21 scraper has a struck capacity of 14.5 cu. yds. Positive hydraulic follow-up steering, 90 degrees each way, is provided. A non-stop turn can be made in 35 feet, while the unit has a turning radius of 28 feet.

The four-wheel tractor has a wheelbase of 127 inches. Overall length of tractor with matched wagon is 42 feet. Struck capacity of the W20 wagon is 14 cu. yds. Door is hydraulic controlled with positive, mechanical lock.



"Sealcoat" Tandem Rollers

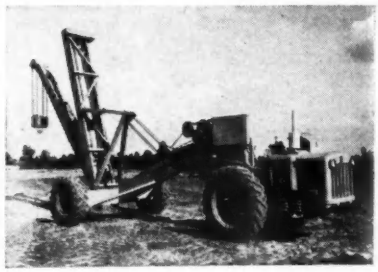
Manufacturer: The Shaw Sales & Service Co., Los Angeles 22, California.

Claims: Three new "Sealcoat" tandem rollers—a three to five ton variable weight and the larger five to eight ton and seven to ten ton variable weight units—are now in production.

All of these new machines have single lever hydraulic steering, are equipped with electric starter, Alemite pressure lubrication, Timkem bearings on all rotating shafts, and a foot operated parking and service brake. All rollers are of all steel construction, electrically welded, and the frames are of steel-rigid box type construction.

The three to five ton variable weight unit is powered with a 25 h. p. Industrial Engine. This roller has two forward and two reverse speeds which allow it to travel from 1.55 mph to 4 mph. With its 91-in. wheel base and 12-ft. turning radius, it is said to handle easily in corners and in confined spaces.

The two larger rollers are powered with 6-cylinder Chrysler Industrial engines with Fluid Coupling. Three-speed Brown-Lipp Transmission allows a forward and backward speed range from .93 mph in first gear up to 4.15 mph in third for both models.



"EC-7" Tournacrane

Manufacturer: R. G. LeTourneau, Inc., Peoria, Illinois

Claims: The "little brother" to a larger 15-ton unit introduced some time ago, this 7-ton crane has been designed to meet smaller capacity lift-and-carry problems.

Called the "EC-7," the new Tournacrane is of similar configuration to the 15-ton design. There is three-way positive electric control for pin-point spotting, lifting, and placing the load. Three Tournatorque electric motors supply a steady flow of power from the moment current is applied. They are fed by a high capacity generator mounted in line with the engine. One motor raises and lowers the pulley block, one raises and lowers the boom, and another determines the angle of the boom track. There is still a fourth electric motor used for positive steering of the prime mover.

It is stated that the crane will lift its rated capacity, without the use of outriggers or counterweights, and then carry the load safely, either on smooth surfaces or across rough terrain. Large pneumatic rubber tires on the vehicle cushion the load in such a manner that both unit and load are said to roll easily over seemingly treacherous obstacles.

Mine and Quarry Hose

Manufacturer: Raybestos-Manhattan, Incorporated, Manhattan

(Continued on Page 34)

STANDARD ENGINEER'S REPORT

RPM CALOL

TEST DATA

UNIT 6 cyl. gas Truck + Bus Engine

LUBRICANT RPM Heavy Duty Motor Oil

FUEL Chevron Gasoline

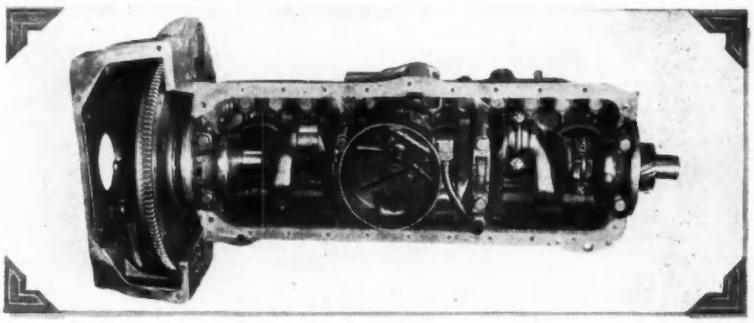
CONDITIONS max. engine loads for prolonged periods

FIRM Mountain Auto Line

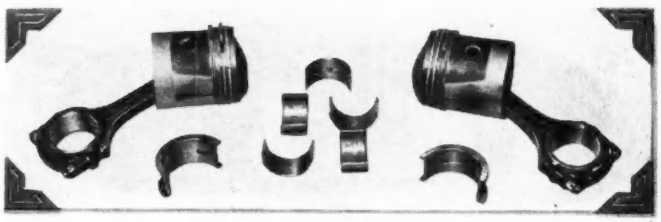
LOCATION San Bernardino, Calif.

TOUGHEST MOUNTAIN SERVICE PROVES RPM HEAVY DUTY KEEPS TRUCK AND BUS ENGINES CLEAN

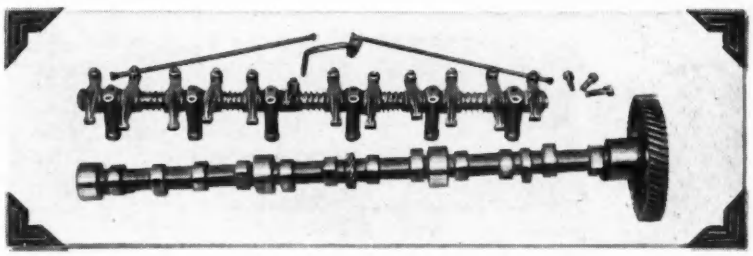
When this engine was pulled out of service for inspection, and the photographs were taken, it had operated on RPM Heavy Duty Motor Oil continuously for 45,000 miles—in service that is about as hard on equipment as any in the country. It is one of 21 units used on a mountain bus and freight run. They climb to a 5000-foot altitude in 15 miles without a stop. Even with 6-bladed fans, pressure-lubricated timing gears and 10-speed transmissions, crankcase temperatures soar above 240 degrees F.



As the pictures at right and above show, the crankshaft, bearings, pistons and rings from the engine were exceptionally clean. RPM Heavy Duty Motor Oil withstands the highest operating temperatures . . . sticks to the hot spots ordinary oils leave bare.



The camshaft was free from lacquer. Pushrods, timing gears and other parts showed minimum wear. RPM Heavy Duty Motor Oil resists oxidation, cleans engines of lacquer and maintains a tough lubricating film. It does this because of inherent properties of its selected base stocks and special compounds.



REMARKS: Many oils, competitive to RPM Heavy Duty Motor Oil, have been tested by Mountain Auto Line in their regular service. Tests have been made in all seasons of the year with atmospheric temperatures ranging from zero to 100°F. above zero in the shade. RPM Heavy Duty Motor Oil is the only oil used that meets every requirement of their engines and prevents clogging with lacquer.

STANDARD TECHNICAL SERVICE conducted and reported this test: If you have a lubrication or fuel problem, your Standard Fuel and Lubricant Engineer or Representative will give you expert help; or write Standard of California, 225 Bush Street, San Francisco 20.

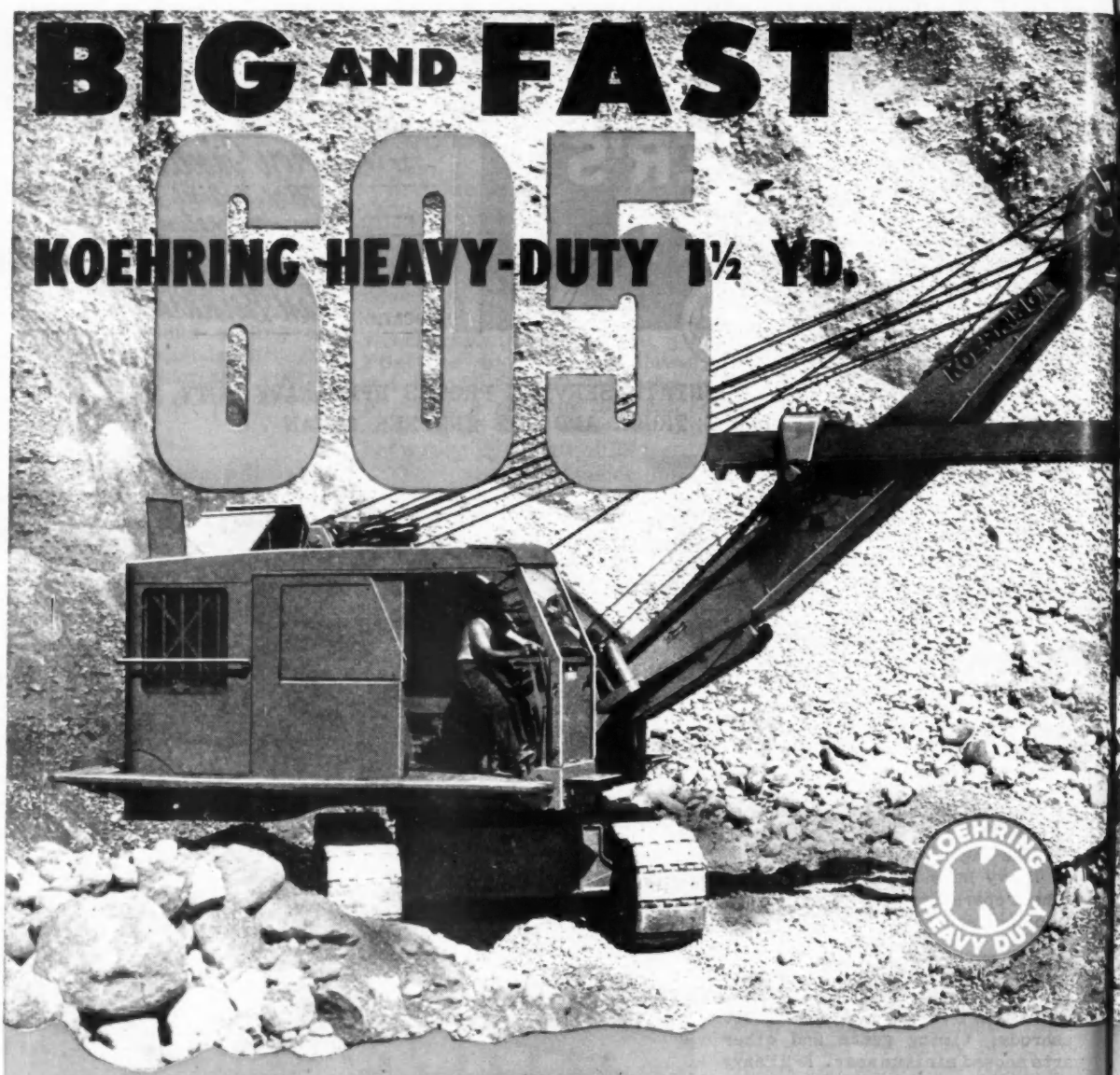
Trademarks, "Calol," "RPM," Reg. U. S. Pat. Off.

STANDARD OF CALIFORNIA • San Francisco, Calif.
THE CALIFORNIA COMPANY • Denver, Colo.
STANDARD OIL COMPANY OF TEXAS • El Paso, Texas
THE CALIFORNIA OIL COMPANY • New York

BIG AND FAST

605

KOEHRING HEAVY-DUTY 1½ YD.



Fast Crowd . . .

With the Koehring heavy-duty 605, your operator can crowd at full speed up through the bank. Heavy coil spring on each side of wide boom foot absorbs jars and strains of fast rock handling. Big 37" power clutch requires only 7 lb. average lever pull, yet the operator always retains the "feel" of load.

Fast Retract . . .

Powerful 26" double-band retract clutch gives fast retract speed with perfect control. Double fulcrum units in control-lever linkage eliminate troublesome over-travel of crowd and retract, as well as swing and traction clutches. Speeds up every shovel cycle, cuts operator fatigue . . . and boosts yardage every hour.

Fast Swing . . .

You can use full throttle on the swing, keep swinging fast all day. Big 605 is fast . . . smooth-swinging, because light spiders of inside-band clutches, not heavy drums, are accelerated . . . cool-running, because finned drums rotate continuously. Fast swings save time . . . make each shift more productive.

KOEHRING COMPANY

Subsidiaries: **PARSONS**
KWIK-MIX • JOHNSON

Fas

Ratchet
. . . .wor
ton is ha
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gets mor
facts on
605 . . .
or ½-ya
your Ko

MILV
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for Octo

Fast Dump . . .

Ratchet dipper trip is trigger quick . . . works every time. Release button is handy, right on top of swing lever. Speed in every operation gets more work done. For complete facts on this big, rugged 1½-yard 605 . . . the Koehring ¾-yard 304, or ½-yard 205 . . . write or see your Koehring distributor TODAY.

MILWAUKEE 10, WISCONSIN

CX611n

Johnson Clamshells Deliver BIGGER PAYLOADS

- **Faster operation**
- **Lower maintenance costs**
- **Longer life**

Here's why:

1 All-welded construction gives lower center of gravity . . . improves bucket balance . . . concentrates digging power on lips and teeth for maximum penetration and capacity loads every time.

2 Weight, saved in other parts by welding, is put back into thick sides, lips and bottom, where extra strength is needed to take constant pounding of hard, fast drops. Strain points are reinforced.

3 Hard manganese cutting edge, welded to heavy lips stays sharp . . . gets tougher with use. Long wearing, maintains big capacity payload digging efficiency.

4 Stones and dirt from heaped capacity loads can't get at sheaves, cables and lower sheave block. Open lower sheave frame keeps sheave spaces clean; material cannot collect under sheaves.

5 Every big closing sheave runs on two needle bearings, which eliminate friction losses . . . keeps sheaves free-running. Effective seals keep dirt and moisture out.

6 Johnson clamshell buckets dump fast and clean . . . not a single projecting rivet or bolt head inside the smooth, all-welded clams to catch and hold clay or mud. Materials slide out easily.

Ask your Johnson distributor about the Wide Rehandling, General Purpose and Heavy-Duty Digging types available in sizes from ⅜ to 2½ yards.

C. S. JOHNSON COMPANY

KOEHRING SUBSIDIARY • CHAMPAIGN, ILLINOIS

New Equipment

(Continued from Page 30)

Rubber Division, Passaic, New Jersey.

Claims: The development of Condor Homo-Flex heavy duty air hose for the service encountered in mining and quarry applications has just been announced.

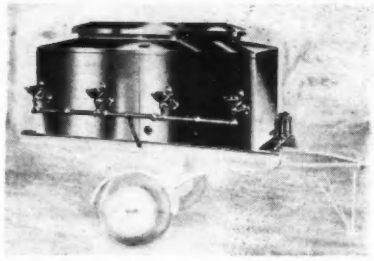
According to the manufacturer, the new hose has an extra strong tube compounded of Manhattan Oil-Proof Flexlastics, two braids of heavy strength member, and a thick abrasive resistant oil-proof Flexlastics cover, yet retains a tremendous amount of flexibility.

Two sizes, ¾" and 1" inside diameters, are being made with working pressures of 350 and 300 pounds.

"Filtrine" Water Cooler

Manufacturer: Filtrine Manufacturing Company, Brooklyn, New York.

Claims: Developed in cooperation with a major oil company, the Filtrine Mobile Water Cooler



was originated as a time-saving efficiency factor for 300-man "floating" crews employed in oil refineries. Its function is to move about with the men and, at job location, to cool, clear, dechlorinate, and provide abundant cold water.

Especially designed for rough-road travel and out-door use, the Filtrine Mobile Water Cooler is built to withstand difficult conditions and climate. It consists of a heavy-duty automatic refrigerating machine and super-size chilled water reservoir of 25 U. S. gallons, housed in a weatherproof stainless steel cabinet. Up to eight sanitary type, stainless steel bubblers, provide for segregated drinking at either side of the cooler. Self-contained filter-dechlorinators are built into the unit.

Portable Air Compressor

Manufacturer: Ingersoll-Rand Co., Phillipsburg, New Jersey.

Claims: The new Pac-Air is a self-contained, completely air-cooled, gasoline-engine-driven unit intended for use by small building contractors, plumbing and electrical contractors; or as a utility compressor for large contractors.

The two-cylinder, single-stage unit has a piston displacement of 37.5 cfm at 80 psi pressure. It is equipped with an automatic unloader which permits the compressor to operate at constant speed, but compress air only when needed. The unit and its gasoline-engine driver are mounted on an air receiver which forms an integral part of the running gear. 6.00 x 16 pneumatic tires and a quickly detachable ball-and-socket type trailer hitch make the Pac-Air easy to tow behind a truck or passenger vehicle.

When used in combination with Ingersoll-Rand's Utility Jackhamer, the Pac-Air forms a team capable of drilling rock, masonry, or concrete.

Choice of the **HEAVIES**

GATKE *Custom-Bilt* **BRAKE BLOCKS**

for Trucks, Tractors, Trailers, Buses, and other heavy equipment

Contractors and Fleet Operators of all kinds use GATKE *CUSTOM-BILT* Brake Blocks because they give —

Smooth Stops, with non-grabbing action for Safety and Tire Saving

Dependable holding power under all service conditions

Long Service Life for fewer adjustments and lower maintenance expense.

Ask your GATKE Jobber or write.

Gatke CUSTOM-BILT BRAKE LININGS

BLOCKS SETS ROLLS SHEETS

GATKE CORPORATION

232 N. La Salle St., Chicago 1, Ill.

HERCOMITES

GELAMITES

Why they are replacing older-type explosives

High cartridge count, Hercomites* and Gelamites* are delivering explosive energy equal to that delivered by the older-type Extra Dynamites and Gelatins they are replacing . . . at considerable savings in cost. Hercomites and Gelamites are easy to handle. They are packed in handy Tamptite* cartridges that make "slitting" unnecessary and save powder. Tamptite cartridges are standard for Hercomites and Gelamites in all sizes regularly used for mining.

Write today for our new explosives booklet, "Hercomites and Gelamites for Lower Blasting Costs."

HERCULES POWDER COMPANY

INCORPORATED

972 King Street, Wilmington 99, Delaware

*REG. U. S. PAT. OFF.

ERD-6

Speed, Power, Versatility!

The World's Most Powerful and Versatile *Towing-Type Tractor!

A single prime mover investment without the idleness of single-purpose equipment! A powerful prime mover for the heaviest jobs . . . with rubber tired efficiency for both on and off the highway operation! A prime mover for most any type drawbar work with sensational operator comfort! All this and more in a powerful tractor designed for greater production and greater profits on every job. See your dealer today for complete information on the M-R-S Model 125. The star performer of the Road Show . . . the most versatile asset to the earth-moving industry.

Write today FOR FORM 116

M-R-S MANUFACTURING C

You get all three in

a Powerful

PRIME MOVER

The

M-R-S "125"

for HAULING • for SCRAPER WORK

for DOZING • for COMPACTING • for GRADING

all in a Single Investment

* A towing-type tractor is considered to be a conventional four wheel tractor with steerable front wheels and having approximately two-thirds of its total weight on the drive axle, thereby posessing the tractive ability for all-round drawbar work.

G COMPANY... FLORA and JACKSON, MISSISSIPPI, U.S.A.

Shots from the FIRING LINE

Announce 1950 Federal Aid Funds Distribution

Sums apportioned to the states from the $450,000,000 fund authorized by the Federal-Aid Highway Act of 1948 for the fiscal year 1950, for improvements on Federal-aid primary, secondary and urban routes, have been announced by Major General Philip B. Fleming, federal works administrator.

The Act, approved recently by the President, authorizes an appropriation of $450,000,000 for each of the fiscal years 1950 and 1951 to assist the states in continuing the postwar highway program for which initial appropriations were made under authorization of the Federal-Aid Highway Act of 1944. Nearly all funds authorized by the 1944 Act have been exhausted by project commitments.

Under provisions of the 1948 Act, as in the previous Act, 45 per cent of the total authorization may be expended for projects on primary roads in the federal-aid system; 30 per cent for the improvement of routes in the federal-aid secondary system, and 25 per cent for work on federal-aid highways in urban areas having a population of 5,000 or more. The states generally are required to match federal expenditures.

The funds are to be administered by the Public Roads Administration of the Federal Works Agency in cooperation with state highway departments according to the usual federal-aid procedure. The apportionment for the fiscal year 1950 will be available next July 1 and will remain available to the States until June 30, 1952.

Sums Apportioned for Fiscal Year 1950 for

	State Federal-aid	*Primary System*	*Secondary or Feeder Roads*	*Urban Highways Total*
Alabama	$4,234,466	$3,347,912	$1,157,921	$8,740,299
Arizona	2,883,981	1,994,406	232,926	5,111,313
Arkansas	3,437,818	2,765,905	495,958	6,699,681
California	8,025,813	4,595,138	7,216,292	19,837,243
Colorado	3,583,930	2,411,757	829,510	6,825,197
Connecticut	1,240,162	681,025	2,316,659	4,237,846
Delaware	974,531	649,688	181,297	1,805,516
Florida	2,894,455	1,938,785	1,421,220	6,254,460
Georgia	5,026,124	3,834,698	1,441,091	10,301,913
Idaho	2,478,367	1,733,203	188,176	4,399,746
Illinois	7,812,450	4,198,769	8,449,887	20,461,106
Indiana	4,762,317	3,193,419	2,723,787	10,679,523
Iowa	4,916,913	3,516,275	1,414,525	9,847,713
Kansas	4,973,808	3,493,343	983,721	9,450,872
Kentucky	3,765,200	3,045,891	1,154,581	7,965,672
Louisiana	3,036,036	2,270,096	1,360,748	6,666,880
Maine	1,721,234	1,240,539	498,017	3,459,790
Maryland	1,632,747	1,043,969	1,590,418	4,267,134
Massachusetts	2.614.477	698.824	5,875,054	9,188,355
Michigan	6,058,649	3,663,939	5,048,623	14,771,211
Minnesota	5,356,784	3,690,493	1,960,081	11,007,358
Mississippi	3,649,214	3,001,136	533,179	7,183,529
Missouri	5,909,105	4,048,164	2,799,683	12,756,952
Montana	4,048,884	2,766,121	273,348	7,088,353
Nebraska	3,954,543	2,791,999	695,466	7,442,008
Nevada	2,564,998	1,718,707	53,853	4,337,558
New Hampshire	974,531	649,688	422,019	2,046,238
New Jersey	2,547,207	927,053	4,911,404	8,385,664
New Mexico	3,234,379	2,238,846	228,567	5,701,792
New York	9,615,348	3,788,591	16,681,818	30,085,757
North Carolina	4,867,144	3,983,477	1,326,007	10,176.628
North Dakota	2,951,523	2,127,843	190,644	5,270,010
Ohio	6,967,252	4,101,078	6,698,622	17,766,952
Oklahoma	4,484,445	3,294,834	1,197,791	8,977,070
Oregon	3,330.486	2,272,391	720,430	6,323,307
Pennsylvania	8,156,836	4,679,791	9,344,128	22,180,755
Rhode Island	974,531	649,688	997,786	2,622,005
South Carolina	2,724,022	2,246,419	581,082	5,551,523
South Dakota	3,114,552	2,217,687	197,342	5,529,581
Tennessee	4,266,287	3,278,719	1,415,352	8,960,358
Texas	12.679.694	8,930,900	3,966,153	25,576,747
Utah	2,259,221	1,504,566	385,353	4,149,140
Vermont	974,531	649,688	188,251	1,812,470
Virginia	3,657,445	2,836,866	1,324,938	7,819,249
Washington	3,145,271	2,129,619	1,303,754	6,578,644
West Virginia	2,211,489	1,857,176	717,603	4,786,268
Wisconsin	4,802,731	3,253,279	2,358,393	10,414,403
Wyoming	2,474,161	1,679,067	118,209	4,271,437
Hawaii	974,531	649,688	349,535	1,973,754
Dist. of Columbia	974,531	649,688	1,018,601	2,642,820
Puerto Rico	987,096	1,006,657	741,447	2,735,200

Legislature OK's Turnpike Authority for New Jersey

A bill creating a New Jersey Turnpike Authority to construct and maintain toll highways was given final approval by the New Jersey legislature. Sponsored by the administration of Gov. Alfred E. Driscoll, the measure won approval of the lower branch of the legislature with only two dissenting votes after having earlier gone through the state senate with only one negative vote.

Senator David Van Alstyne, Jr., Bergen County Republican, who introduced the bill, declared that establishment of the Turnpike Authority was needed as the first step in getting to work on a long-range highway construction program, overall needs of which he estimated might run between $400,000,000 and $700,000,000.

The three-member authority, set up in the State Highway Department, will issue revenue bonds to be retired from tolls collected. The faith and credit of the state will not be pledged to retire-

ment of the bonds. The authority will be permitted to use the tolls from one highway to finance the construction of other highways. It will have a free hand in hiring engineering or other technical assistance it may need.

First road contemplated under the new legislation would be an express highway from Penns Grove in Salem County to around New Brunswich in Middlesex County, ultimately extending to the Hudson River to accommodate through interstate traffic that now congests the main Philadelphia-New York route.

Senator Van Alstyne asserted that because New Jersey is a "corridor" state, with hundreds of thousands of vehicles passing through annually, a toll road running from the southwesterly to the northeasterly section of the state "would be about as successful as any in the country." In advocating toll roads, Governor Driscoll had expressed the opinion that truck operators and others would be willing to pay for express routes that otherwise would not be available.

The three members of the Turnpike Authority will be appointed by the governor for five-year terms. They will serve without pay, but will be entitled to expenses. The authority will be empowered to condemn land for highway purposes, receive gifts of land or money (except appropriations by the state legislature) and utilize the facilities of the state highway department prior to sale of its bonds. The highway department will be reimbursed for any expenditures. Highways to be constructed, maintained or operated by the new Turnpike Authority will be designated by the state legislature.

ND Road Work at Record

North Dakota has more highway construction in progress this year than at any previous period in the state's history, according to an announcement by State Highway Commissioner N. O. Jones. Jones predicts his department will award contracts for more than $10,000,000 during the 1948 calendar year and will have all but $1,500,000 of this under actual construction before Jan. 1.

Highway construction in the state will continue next year at about the same volume, Commissioner Jones said. He said current activities involves work in 25 counties and include 233.3 miles of new grading, 71.4 miles of oil surface, 24.6 miles of concrete surface and 105.2 miles of gravel surface. In addition, 240 miles are being rebuilt by state and county forces at state expense.

Ky. Road Scholarships

Eighteen scholarships will be offered selected first-year engineering students at the University of Kentucky by the Kentucky Department of Highways, according to Commissioner Garrett L. Withers. The scholarships, valued at $500 each, will be supplemented by summer employment within the department for the entire period of the student's education.

"The plan is being advanced for the purpose of encouraging young engineers to become interested in the department," Mr. Withers said. "In the past we have been unable to attract enough graduates to enter our field of engineering. The department's engineering problems are increasing every day, and we are rapidly approaching the time when additional engineers will be a necessity."

The scholarship committee of the University will be asked to select two students each from the nine highway districts. The selections will be made upon a competitive basis, and students will be classed as employees of the department. Interested graduates of accredited high schools may obtain application forms by writing the personnel department of the University of Kentucky or through any district office of the Department of Highways.

Outline Oregon Needs

Oregon needs 7,210 miles of immediate highway construction at an estimated cost of $261,327,000, and a 10-year program to construct 21,654 miles at a cost of $704,983,000 to keep abreast of minimum transportation needs, according to recommendations submitted

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to the state legislative interim highway study committee by G. Donald Kennedy, consultant in charge of a year-long highway and street study.

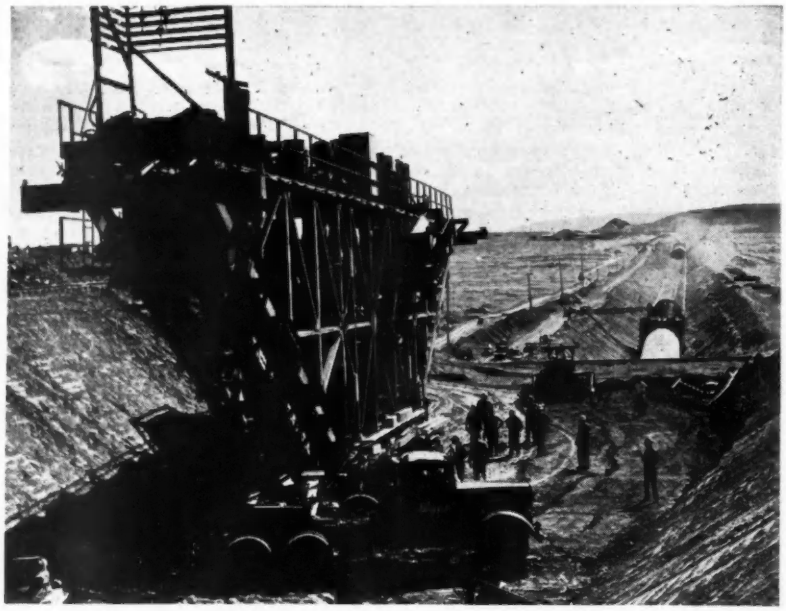
In addition to the immediate construction needs, there will be 14,444 miles of state highway county roads and city street systems requiring major improvement within the next 10 years, the committee was told by Kennedy, who is vice president of the Automotive Safety Foundation, Washington, D. C.

It was estimated that the annual cost, including construction, maintenance and administration, will be $83,418,000 if completed in 10 years. Under a 15-year program, costs would be $63,286,000 a year, while the annual cost on a 20-year basis would be $54.609,000. A program longer than 20 years would encounter the law of diminishing returns, Kennedy said, where roads would become obsolete faster than they could be rebuilt.

Elect New Foley V. P.

Captain Paul J. Halloran (CEC) U. S. Navy has been elected vice president of Foley Brothers, Inc. international engineering construction firm of Pleasantville, New York, according to an announcement by Carl L. Swenson, president.

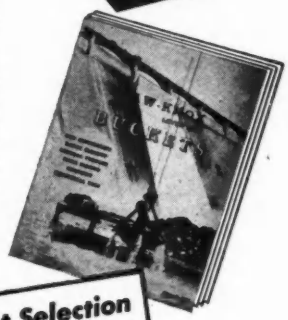
During twenty-seven years of service with the Navy, Captain Halloran has had under his charge several important large construction projects for the



• Special hauling equipment was brought from Oakland, California, when the Winston-Utah Construction Co. moved Guntert & Zimmerman trimming and lining machines along various sections of the West Canal of the Columbia Basin project in Eastern Washington. Here a 120-ton trimmer arrives to start a new run. The truck—owned by Bigge Drayage Co., Oakland, California—is a Kenworth 548 powered by a 150-h.p. Cummins HB diesel engine. Mounted on ten 11 x 22 tires and weighing 22,200 lbs., the truck tows a 60-ton Trailermobile lowboy mounted on 16 tires (all 8.25 x 15) and a 60-ton dolly with 16 tires of the same size as the first trailer.

YOU'LL FIND IT ON PAGE 20

Among general contractors, one of the most popular Blaw-Knox Buckets is No. 672, rated ¾ Cu. Yd. It's a general purpose two-line, lever arm type that digs like a mole. On page 20 of Catalog 2076, there's a photo of it at work, and on page 34 you will find a complete table of weight, measurements and other data you need. Of the more than 100 types and sizes of Blaw-Knox Buckets, this may be the one to speed your work. Write us for *Catalog No. 2076.*



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Bureau of Yards and Docks. During World War II, he administered the construction of extensive dry dock and other heavy construction projects at naval bases at Norfolk, Virginia, and Newport, Rhode Island.

Captain Halloran commanded the assault Seabees in the Marianas campaign and served as construction officer on the staff of the commanding general (Marine) 5th Amphibious Corps, and later organized and headed the 6th Naval Construction Brigade, assigned the task of constructing the largest airdromes for B-29 operations.

Wartime Surplus Gone, Fla. Sees Serious Fund Lack

Florida's postwar highway construction program has been the greatest in the history of the state, but further extensions will be impossible unless new revenue is provided, according to State Road Chairman Elgin Bayless. He reports that Florida has reconstructed or improved almost 3,000 miles of its 8,736-mile state-maintained road system and has added 400 miles of new highway to the network during the last three and a half years. Revenue coming in from gasoline taxes will be little more than enough to maintain the system as it stands and keep making improvements to modernize the network.

Florida spent $71,211,000 on construction and $17,057,000 on routine maintenance from Jan. 1, 1945 to June 30, 1948, according to Bayless. During that period, he said, 400 miles of new roads were built, more than 1,500 miles completely rebuilt and almost 200 miles widened. Thousands of feet of bridges also were constructed. In addition to projects completed on April 30, contracts had been awarded for $21,239,000 worth of work on 624 miles of roads and $6,594,000 for 13,200 feet of bridges.

Bayless reported that the highway revenue surplus of several million dollars built up during the war has been exhausted, and the department is now being operated on a strictly current basis. Noting that the department already has spent $15,163,000 this year, he said the anticipated revenue of $14,000,000 during the remaining six months of the year will be needed to meet existing constructural obligations.

"Unless new revenue is found," he declared, "the activities of the State Road Department will be confined to improving the standards of the existing state-maintained system of 8,736 miles to meet the ever-increasing traffic needs."

Start $55 Million Fiscal Year for California Roads

California's State Highway Commission has anounced that its $55,656,000 construction program for the fiscal year which started July 1 will result in improvements to about 607 miles of state highway of which 130 miles are multiple lane. In the first year of operations under the Collier-Burns Highway Act, which was enacted by the 1947 California Legislature, 342 contracts totaling $80,574,400 were awarded or were advertised for bid opening.

Of the 607 miles scheduled for improvement in the new fiscal year, 317 miles are in the 45 northern counties and 290 miles in the 13 southern counties. Also included in the program are 170 bridges or grade separation structures. New money is to be spent on major construction projects, minor improvements, betterments and construction engineering, the commission said. Additional sums of $18,282,000 for rights of way acquisition and $20,000,000 for highway maintenance are provided.

The commission explained that with the development of the modern highway system with multiple lanes and separation structures, acquisition of right of way becomes an increasing percentage of highway costs, particularly in urban areas. Maintenance expenditures on the state's 14,000-mile highway network represent substantial increases over those of past years, according to the commission, which explained this is due to the higher per-mile cost and to the fact that the Collier-Burns Act requires the state to maintain all city streets which are state routes.

In the fiscal year just ended the State

Longer Life Lower Costs

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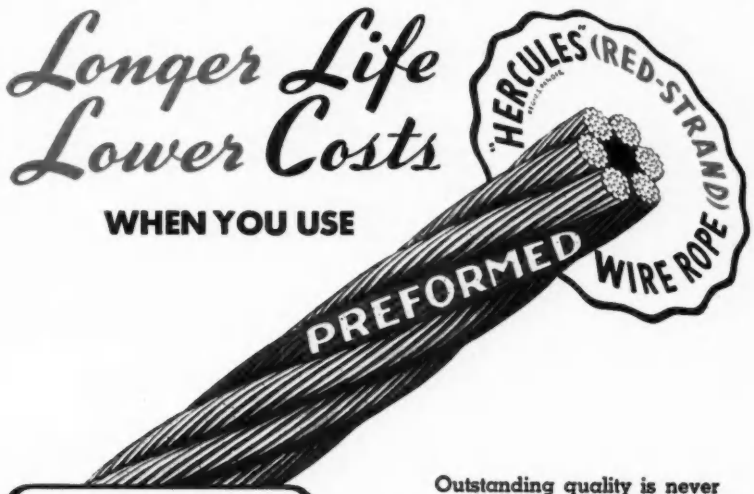

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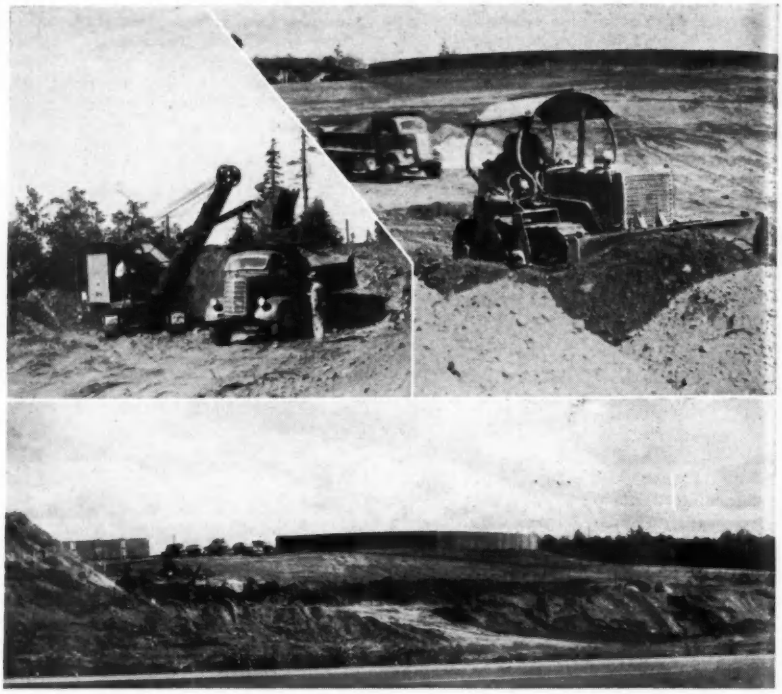
Division of Highways completed a program resulting in improvements to 230 miles of state highways, 91 miles in the northern part of the state and 139 in the south. Seventy-eight of these miles called for multiple construction, four lanes or more. There were 145 bridges and grade separation projects financed during this period.

Besides its own highway program, the State Division of Highways continues to administer federal aid for improvements to county roads in the government system. This program is financed from nearly $15,000,000 in federal funds apportioned to California and from matching funds provided to the counties by the State Legislature. Thus far 115 federal aid contracts have been awarded or advertised, with a total construction value of $19,620,000.

So Midgets May Race

Madson & Dunnevan, general contractors of Angle Lake, Washington, are both builders and owners of a $60,000 midget auto race track now under construction on a 30-acre area adjoining U. S. Highway 99 about midway between Tacoma and Seattle.

The enterprising project is located on a hilly tract requiring considerable excavation, clearing of trees, brush and debris, with filling in and leveling off operations covering practically the entire area. For this purpose they rented a Bucyrus-Erie 22-B power shovel with



• Top Left: ¾-yd. Bucyrus-Erie 22-B shovel loads out dirt to a 6-yd. Mack dump in the main cut.
• Top Right: Fills were levelled by this D-4 Cat-mounted bulldozer.
• Above: The 6000-spectator-capacity race track is 100 feet above the highway (foreground), and the levelled parking area will accommodate 1500 cars.

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• This Lorain TL-20 self-propelled crane was lifted to its high perch at Allatoona Dam by the cableway it helped to assemble. The rig is setting sheet piling for the secondary cofferdam.

a ¾-yd. bucket from a contractor's rental service and employed their own four Mack 6-yd. dump trucks to haul and dump all dirt excavated by the shovel.

Dirt hauls were all confined to the race track and parking areas. The shovel was used to cut down the hills and level off areas for the race track and parking site with the dirt being used to fill in and build up the track and parking field. Approximately 50,000 cu. yds. of earth were removed over a working period of three months, with the shovel averaging 900 yards per 8-hour day. Since the race track itself is perched on an area about 100 feet above the highway with the parking area located between the track and highway, considerable filling in operations were necessary in order to build up the parking area to the required level.

A D-4 Caterpillar-mounted Isaacson bulldozer was used for leveling-off piles of brush and debris in preparation of the site.

The oval-shaped track, one-quarter mile in circumference and 48 feet wide, is built on an angle varying sharply at the curved ends to safely accommodate fast driving of the midget racing cars. The track itself was constructed and based with dirt firmly compacted with a 10-ton Galion Chief roller. It was then surfaced with compacted gravel and paved with asphaltic concrete for fast safe driving. The grandstands and high wall surrounding the race track are of wood construction, using wide bark-covered slabs for the wall which give it a rustic appearance.

Room in Your Expense Account for This One?

by T. H. Johnston

A recent press dispatch relates how an excavating engineer's problem was neatly solved in a rather unorthodox fashion. One wonders how the expense account for a rooster, a bottle of gin and a witch doctor's fee was received when it hit the front office.

Work had started satisfactorily on the excavation for a new building near Dakar, Senegal, in French West Africa. Most of the work was being done by native laborers, and during operations, it was discovered that the walls of the pit were starting to cave in. It wasn't long before the natives refused to continue, complaining to the engineer that bad "Ju-Ju" was at work. In cases of this nature, said the men, there was only one solution and that required the assistance of the local witch doctor.

Anxious to get the men back on the job, the engineer gave in, and in due course the witch doctor arrived. He carefully inspected the work and after consulting with his own special deities called for a white rooster and a bottle of gin.

The required articles were found and with suitable incantations, the witch doctor cut the rooster's throat permitting some of the blood to fall into the pit. This was followed by the gin. The native workers, apparently satisfied that the bad Ju-Ju had been propitiated, returned to work and finished the job.

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Progress in Solution of Off-Street Parking Snarl

By BETHUNE JONES

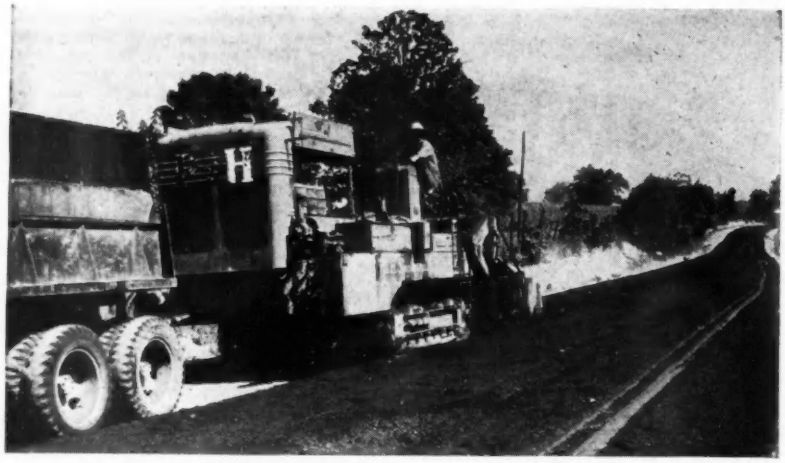
Programs to alleviate urban traffic congestion, including measures of far-reaching interest to the construction industry, are being increasingly projected in cities throughout the country, a survey reveals.

The trend is accompanied by growing recognition among both public officials and private interests that the problem of freeing central business districts of paralyzing traffic snarls is not susceptible to speedy solution through any readily available panacea.

Among the varied steps being taken or planned to aid in solving the problems are: Development of increased off-street parking facilities, both public and private; off-street truck loading and unloading facilities; construction of expressways; promotion of greater use of public transit, in some instances in conjunction with "fringe" parking facilities; construction of union truck and bus terminals; installation of parking meters; staggered employment hours in congested areas; coordination of the activities of agencies and officials concerned with traffic control and parking; and revision of traffic control regulations.

In continuation of a trend which saw such measures enacted in a number of other states last year, the New York State legislature recently enacted a bill authorizing cities to acquire property through condemnation and sell or lease it for the private construction of garages and parking lots. In addition to such authority for governmental aid to private enterprise in attacking the off-street parking problem, some or all cities in nearly half the states have been given legislative permission to own and operate off-street parking facilities.

Issuance of revenue bonds for the construction of multi-storied parking garages, which will be leased to private operators, is currently under consideration in a number of major cities, with indications that this trend will continue as enabling legislation is enacted by additional states. It is generally conceded that in many cities private commercial operation of off-street parking facilities to the extent needed to clear congestion is unfeasible without some form of government aid, although in some cities, such as Oakland, Calif., and Allentown, Pa., mer-



• On a recently completed road job in Lauderdale County, Mississippi, extending from the Alabama line to Vimville, this P & H single-pass soil stabilizer is reported to have processed 3000 linear feet of soil-bituminous road a day. The work extended 10½ miles, was 22 feet wide and six inches deep. The rig worked in natural soil of A-2 classification with PI of 5 or less, and clay having PI of 19 combined with sand to produce material of A-2 classification. Asphalt, R.C.2 (4.32 gallons per sq. yd., equal to 7% by weight of dry soil) was the stabilizing agent.

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chants have succeeded through cooperative action in providing effective off-street facilities.

Plans for the construction of huge underground parking facilities, as pioneered in San Francisco, have been considered by many major cities and are currently going ahead in some instances. There appears to be an increasing belief, however, that underground garages would be profitable only under certain exceptional conditions and are by no means a general answer to the off-street parking problem.

In some cities it is being proposed the local building codes require that all new buildings make provision for off-street loading, unloading and manœuvering of the trucks which are required to service them, and that similar requirements apply to alteration of existing buildings. Considered but not enacted by the New York State Legislature this year, with the possibility that similar proposals may be raised in other states, was a bill to require new factories, hotels, office buildings and other "traffic generators" to provide off-street parking facilities unless specifically exempted by local ordinance.

Expressway Favored Solution

Construction of modern urban expressways into, through, and around business areas is either planned or already underway in many cities where surveys show that much of the downtown traffic consists of vehicles that are going through to another part of the city. Federal aid funds are available for such construction, as well as an increased amount of state funds in many states. Development of the federal aid urban system has been slow in comparison to progress on primary and secondary systems, it has been pointed out, however, because of the more intricate design required and correspondingly high costs of highway and bridge projects.

Public transit facilities are expected to play an increasingly important role in solving the urban traffic congestion problem and are regarded by many traffic experts as one of the key answers. It has been pointed out that traffic congestion can be relieved in direct proportion to the number of people who will discontinue using private automobiles, and substitute the public transit service when coming into town. To encourage greater use of public transit, "fringe" parking lots have been experimented with by some cities, with motorists leaving their cars outside the central business district and going the rest of the way by public transit.

A bill is pending in the Massachusetts legislature which would provide for the creation of a special truck authority to construct and operate two union truck terminals as a means of minimizing traffic congestion by eliminating heavy trucking in the city of Boston. The proposed terminals would

(Continued on page 48)

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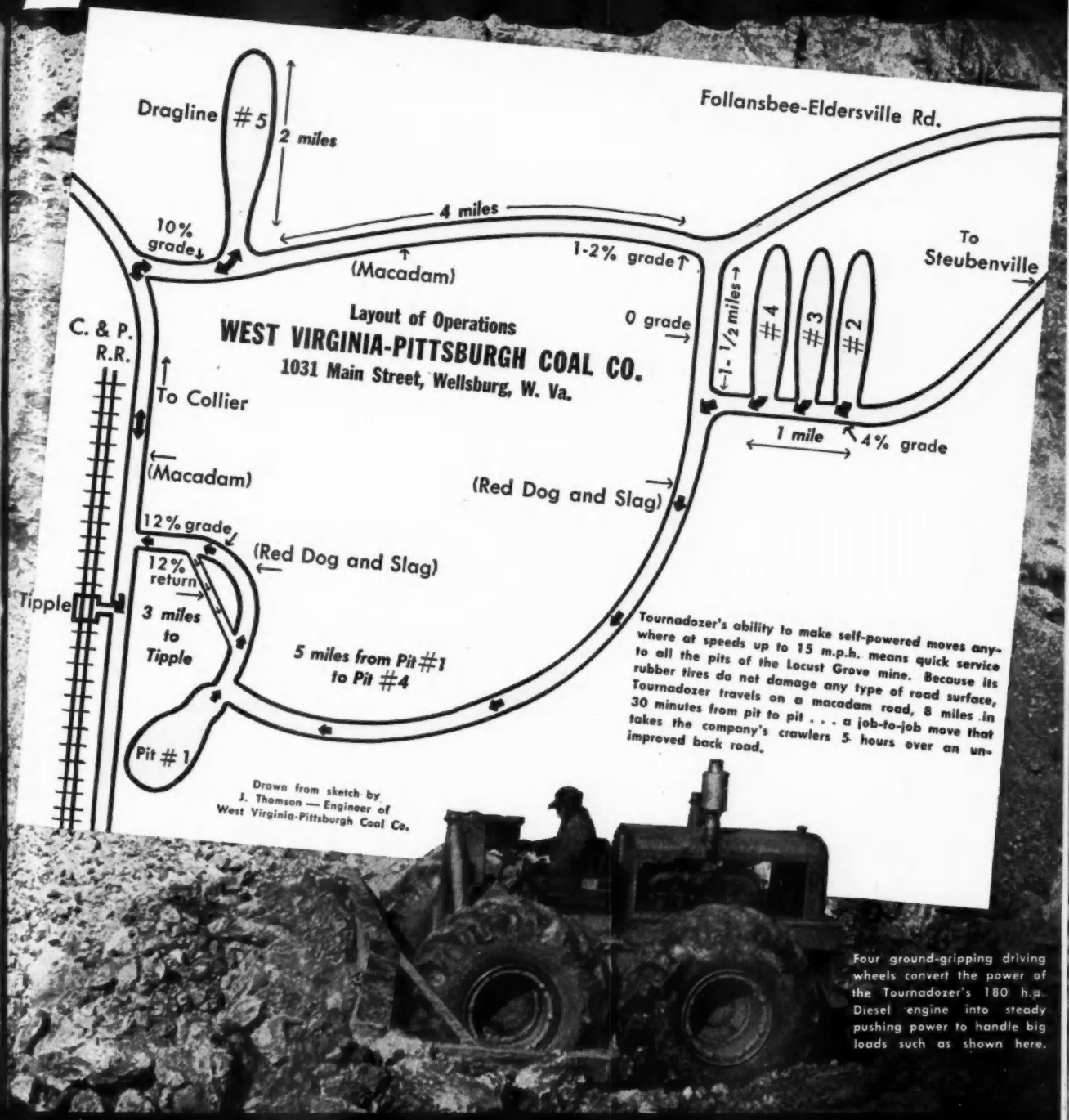
1 TOURNADOZER at Pittsburgh Coal Co.



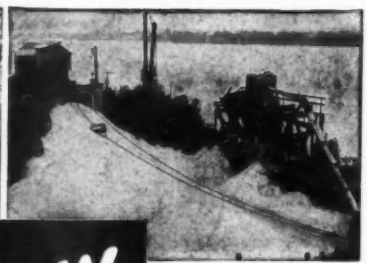
Tournadozer's ability to make self-powered moves anywhere at speeds up to 15 m.p.h. means quick service to all the pits of the Locust Grove mine. Because its rubber tires do not damage any type of road surface, Tournadozer travels on a macadam road, 8 miles in 30 minutes from pit to pit . . . a job-to-job move that takes the company's crawlers 5 hours over an unimproved back road.

Four ground-gripping driving wheels convert the power of the Tournadozer's 180 h.p. Diesel engine into steady pushing power to handle big loads such as shown here.

LETOURNEAU PEORIA, ILLINOIS — HIGH-SPEED RUBBER-TIRED **TOURNADOZERS**

FOR ALL DIG-AND-HAUL WORK!

Sauerman Cableway pictured above is digging gravel from bar in river and hauling to top of screening plant in one operation. Handles 700 cu. yd. a day at cost of few cents a yard.



This picture shows a small Sauerman Scraper handling large stockpile of silica at processing plant. Scraper stocks out material from washery and reclaims at regular intervals from stockpile to dryer.

CUT TIME IN HALF with Sauerman

Long Range Scrapers and Cableways

Sauerman Crescent Scraper Bucket

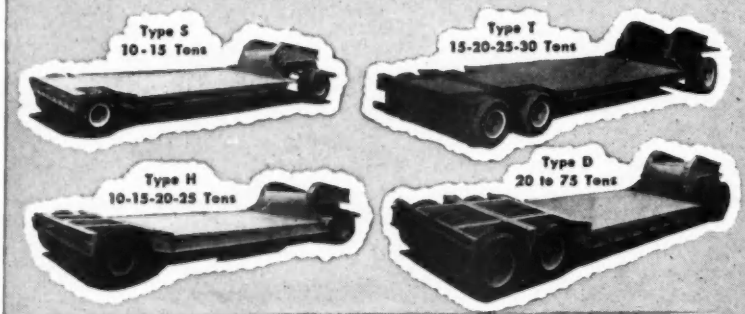
Digging, hauling and dumping operations are combined in one continuous process making possible big savings in both time and labor. Only one man is required for complete control of the operation. Sauerman Cableway and Scraper Machines provide wide range of handling capacities and long reach. Remarkably low operating and maintenance costs. Gasoline, electric or Diesel. Write for interesting new catalog and describe your digging and handling problems.

★

SAUERMAN BROS., Inc.

574 S. Clinton St., Chicago 7, Illinois

5 BASIC TYPES of ROGERS TRAILERS



● Choose the one that most nearly meets your needs and ideas. We'll develop a trailer "tailored" to conform to your ideas, adapted particularly to your tractor and efficiently designed to your specific kind of hauling.

ROGERS BROTHERS CORPORATION

DESIGNERS and BUILDERS of HEAVY DUTY TRAILERS SINCE 1915

136 ORCHARD ST. ALBION, PENNA.

Shots

(Continued from Page 45)

cost from $4,000,000 to $5,000,000, would be tax exempt and financed by 45-year revenue bonds. Trucking firms using the terminals would pay fees to be set by the authority.

N. Y. Truck Terminals

Two union truck terminals, one in New York and the other in Newark, N. J., are now being constructed by the Port of New York Authority at a total cost of approximately $10,000,000. Similar projects, designed to effect shipping economies as well as cut street congestion, are being considered in other cities. Union bus terminals also are viewed as a means of reducing traffic congestion.

An increasing number of cities, especially in the 100,000-to-500,000 population bracket, are turning to the use of parking meters in their efforts to alleviate traffic congestion. The number of cities using parking meters has trebeled since the end of the war and now totals more than 1,500, according to a recent report by the International City Managers Association.

Staggering of employment hours, such as was used effectively during the war to relieve crowding on transit vehicles, has been proposed as a means of reducing traffic congestion. Such action by large city employers, some authorities believe, would be particularly effective in industrial areas.

Coordination of the activities of all municipal agencies and officials concerned with traffic control and parking is viewed as another means of dealing with the problem more effectively. Along these lines the New York State legislature this year enacted a bill empowering municipalities to create traffic control boards to advise on improved methods of combatting traffic congestion.

DREDGES

HYDRAULIC DIPPER CLAMSHELL

Bolted sectional steel hulls for landlocked, inland waters

If you need a dredge, write us!

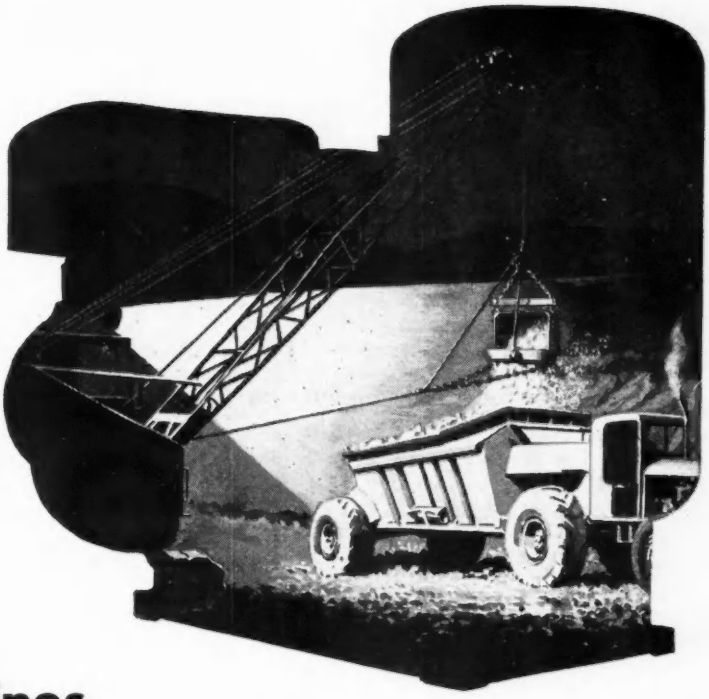
AMERICAN STEEL DREDGE CO. INC.
FORT WAYNE 1 · INDIANA · U.S.A.

DESIGNERS AND BUILDERS OF DREDGING EQUIPMENT SINCE 1905

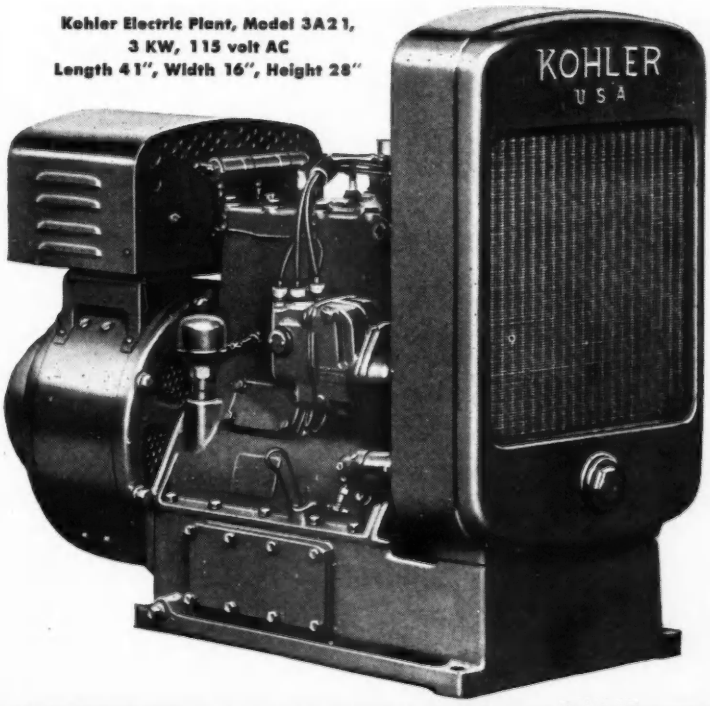
Why

KOHLER ELECTRIC PLANTS

are specified for Excavators, Draglines, Cranes



Kohler Electric Plant, Model 3A21,
3 KW, 115 volt AC
Length 41", Width 16", Height 28"



Practically all manufacturers of excavators, draglines and cranes have regarded Kohler Electric Plants as standard equipment for many years. The reason for this is simply the outstanding reputation for ruggedness, reliable service, convenience and economy which Kohler Plants have achieved. As a steady source of current for all the lights needed, they have helped night crews achieve maximum efficiency on countless jobs. They can be easily mounted, and have assisted contractors and engineers in meeting schedules on many important construction projects—when used for lighting or operating motors, pumps and power tools.

For stand-by protection Kohler Electric Plants fill many important requirements. In schools, stores, hospitals, theatres, homes, farms and many other places they are installed to assure continued operation of vital equipment when storms or accidents interrupt the customary source of electric current.

Kohler Electric Plants are available in sizes from 800 watts to 10 KW, with or without metal housing and skid base for portable outdoor service. Kohler quality is a 75-year-old tradition. Write for illustrated Folder B-12. Kohler Co., Kohler, Wisconsin. Established 1873.

KOHLER OF KOHLER

PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS

Notes from the manufacturers

LaPlant-Choate Manufacturing Company, Incorporated, Cedar Rapids, Iowa, has appointed C. W. Scholvin District Representative in the eastern sales area. His territory includes New York, Pennsylvania, Maine, Maryland, New Hampshire, Connecticut, and the eastern part of Canada.

According to John R. Earle, General Manager, extensive building alterations are under way to accommodate the sales and service activities of the new General Motors diesel department in both Detroit and Grand Rapids.

General Motors Corporation, Detroit Diesel Engine Division, Detroit 28, Michigan, announces that The West Coast Engine & Equipment Company, marine and industrial distributors for General Motors Series 71 diesel engines, has opened a new sales and service plant in Berkely, California. The site of the plant is on Ashby Avenue, close to the eastern terminal of the San Francisco Bay Bridge and easily accessible from either San Francisco or Oakland.

The new Berkely building incorporates general offices, complete parts department, spacious shop, and a showroom. The service shop covers an area of approximately 4,000 square feet.

Cummins Engine Company, Incorporated, Columbus, Indiana, has acquired the Omaha, Nebraska, Cummins dealership, formerly operated by Interstate Machinery and Supply Company. The dealership, which will be operated as a wholly-owned subsidiary, has been reorganized as Cummins Diesel Sales Corporation and has occupied a new location at 50th and Center Streets, Omaha.

(Continued on Page 56)

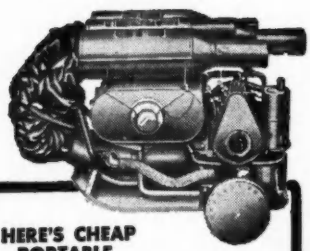
ERIE BUCKETS

• Erie builds all types of buckets in various capacities and weights to meet the job and operating conditions. Choose the correct bucket for the job and you get maximum speed and output. Write for broadside on the complete Erie line of buckets.

THE COMPLETE LINE

Address
4810 Geist Road

ERIE STEEL CONSTRUCTION CO.
ERIE, PENNSYLVANIA
Aggre Meters • Buckets • Concrete Plants • Traveling Cranes



HERE'S CHEAP PORTABLE
HEAT FOR ALL

Portable Heaters expedite Winter work at small cost! Emergency heat for any purpose. **DRIES** concrete, plaster, grain, paint, lumber etc. **STARTS** cold motors, trucks, tractors, airplanes etc. **THAWS** frozen materials, plumbing, machinery and men.

These Stewart Warner war surplus preheaters produce 100,000 B.T.U.'s per hour on 1½ gallons gas and deliver same anywhere thru three long ducts. Starts like outboard motor. Order now...Supply limited. Spare parts available.

Enclose check or money order or send 1/3 deposit, balance C.O.D. with privilege of examination.

New and unused.	Rebuilt and test run
~~$630.00~~	~~$630.00~~
Now	Now
$295.00 F.O.B.	$187.50 F.O.B.

Quantity Discounts

KARL ORT
Department EE
YORK, PA.

save time between jobs with JAHN TILT TRAILERS

Tilt—load—and you're off in a matter of minutes with a Jahn Tilt Trailer. No jacks or loading ramps required. One-man operation. Positive, automatic safety lock holds platform in position when loaded or empty. Rubber mounted drawbar absorbs road shocks and protects both truck and trailer. Ideal for transporting tractors—rollers—compressors—shovel-loaders—mixers, etc. Jahn Tilt Trailers are available in 8 ton capacity tandem axle and 5 ton capacity single axle models. Write for specifications and illustrated bulletin or see your nearest Jahn distributor.

C. R. JAHN COMPANY
Dept. 49—1106 W. 35th Street, Chicago 9, Illinois
Heavy duty Trailers from 5 to 100 tons

Crushed more than 600,000 yds. of rock

...no sign of wear on the TIMKEN® bearings

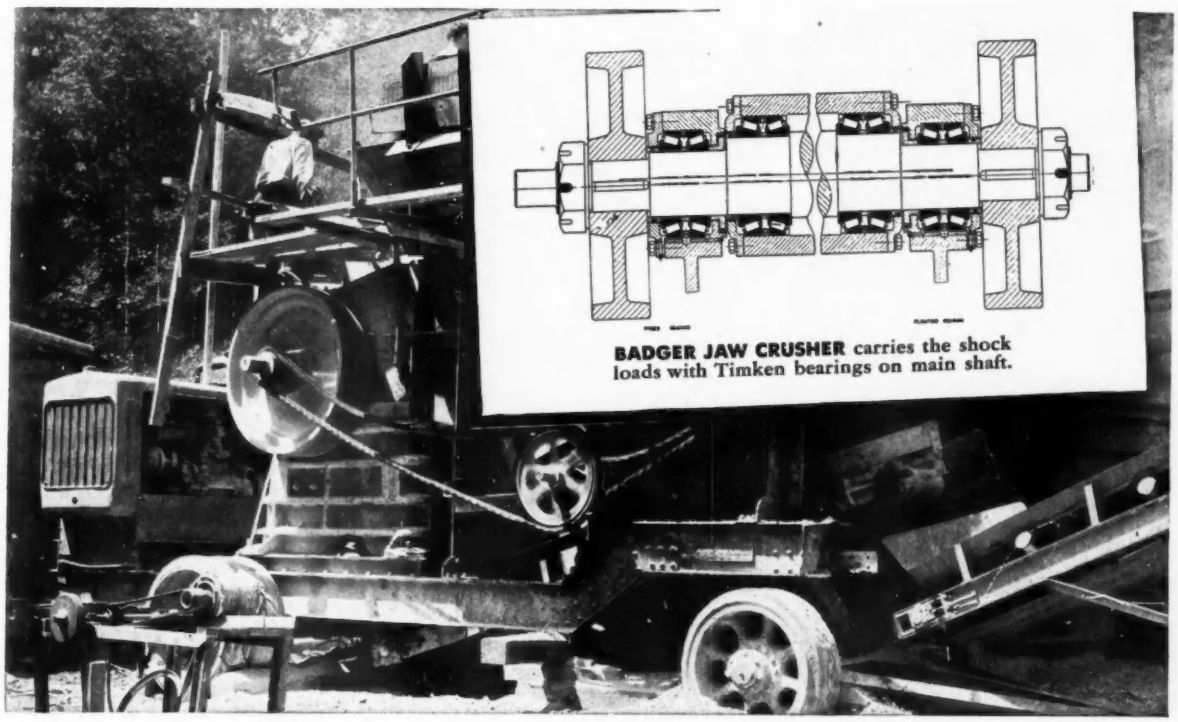
THIS Badger portable jaw crusher, manufactured by Wisconsin Foundry and Machine Co., has been in operation since 1936. The main shaft is mounted on Timken® tapered roller bearings which show no sign of wear even after crushing more than 600,000 yds. of rock.

Timken tapered roller bearings are made from the finest bearing steel ever developed—Timken fine alloy steel. Due to the line contact between rolls and races, Timken bearings have tremendous load carrying capacity. Their true rolling motion and incredibly smooth surface finish enable Timken bearings to operate freely, frictionlessly.

Timken bearings permit the use of closures which effectively retain lubricants, saving both maintenance time and materials. And they take any combination of radial and thrust loads.

Over the years, the dependable performance of Timken bearings have made Timken-equipped products first choice throughout industry. Timken bearings in your product add a valuable sales feature. They build greater acceptance for your product among customers. When you specify bearings, specify" Timken". And when buying a piece of machinery, be sure it's Timken-equipped. The Timken Roller Bearing Company, Canton 6, Ohio. Cable address: "TIMROSCO".

This label on a product means its bearings are the best.



BADGER JAW CRUSHER carries the shock loads with Timken bearings on main shaft.

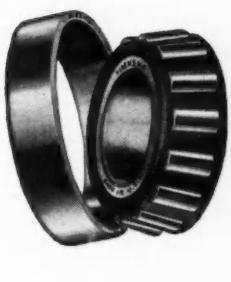
TIMKEN BEARING CAPACITY RATINGS INCREASED 25%.

Since Timken bearings were last re-rated some 15 years ago there has been such a further and constant improvement in quality that we are now able to announce a 25% increase in radial and thrust load carrying capacity. This may make possible the use of smaller bearings with savings in bearing cost, material cost and weight. Engineers will be able to utilize the advantages of Timken bearings in more applications than in the past.

A new Timken Engineering Journal, now in preparation, will give you complete capacity rating tabulations. For further assistance, write us today.

TIMKEN

TAPERED ROLLER BEARINGS



NOT JUST A BALL ○ NOT JUST A ROLLER ▭ THE TIMKEN TAPERED ROLLER ▭ BEARING TAKES RADIAL ◫ AND THRUST ◫ LOADS OR ANY COMBINATION ✳

NOT in the *Contract*

"That's pretty good-looking for a used car. What's the most you ever got out of it?"

"Nine times in one mile."

The scene was in the reading room of a large public library. A man was reading birth and death statistics. Suddenly he turned to the man on his right and said, "Do you know that every time I breathe a man dies?"

"Very interesting," replied the stranger. "Why don't you chew gum?"

At an entertainment one of the ladies had just finished singing "My Old Kentucky Home" when a man in the audience was seen in tears.

"Are you from Kentucky?" he was asked.

"No, I'm a musician," he replied.

A Hollywood child was asked if she had a mamma and papa.

"I should say I have," came the reply. "I have three papas by my first mamma and two mammas by my second papa."

"Clancy! Is there any truth in the rumor about your striking gold on this job?"

A very heated bridge game was being played by four society women. The stakes were high and the players were concentrating on their hands when the colored maid of the hostess edged over to the table.

"Miss Smith, it's four-thirty, which is time for your bath."

Miss Smith turned, but kept her eyes on her cards. "Really, Gloria, I can't leave the game just now. Suppose we pass it up for today?"

"But, Miss Smith," objected the maid, frowning, "this is the twelfth day you passed it up."

A Kansas revival meeting was in progress and one of the partners in a coal concern had joined the church. He tried to get his partner to do likewise. "I just can't do it, John" whispered the partner when the insistence became irksome. "If I join who'll do the weighing?"

The nice old lady smiled at the little girl who had been left in charge of the cake shop and inquired, "Don't you some times feel tempted to eat one of the cream puffs my dear?" "Of course not!" the little girl replied, shocked. "That would be stealing. I only lick them."

The young engineer came home from the project for the weekend. "What's the matter, dear?" he asked his young wife. "You look upset."

"Oh, it's been a dreadful week," his wife said. "First the baby cut his first tooth, then he took his first step, and then he fell and knocked out his tooth."

"Well, then what happened?" asked the young pop.

"Then, darling," cried the young wife unhappily, "then he said his first word!"

They laid him out on the station house floor, and the doctor examined him, while the cop who had brought him in stood by. The doctor finished and rose. "That man's been drugged." The cop went white and shivered. He said: "That's right sir. It's my fault. I drug him six blocks."

WHEN OTHER MACHINES ARE "MOVING UP"

Bucyrus Walkers are MOVING DIRT

MUCH time ordinarily spent on moving about is converted into productive digging time when you put a Bucyrus-Erie walking dragline on your operations. The reason is simply that a Bucyrus-Erie cuts moving time by taking the most direct route. It can walk safely and surely in any direction, can change course by a mere swing of the revolving frame; no special steering mechanism is used — or needed. The machine is always ready to step off in any direction necessitated by working conditions—away from slides, along the edge of a steep bank, around obstructions, out of trouble's way.

With its exclusive rolling-cam walking traction, a Bucyrus-Erie takes every step safely, smoothly, quickly, cushioning the machine down. Rough ground seldom bothers because the walking shoes are mounted to pivot sidewise, conforming to any ground surface for a firm grip.

The walking efficiency of a Bucyrus-Erie gives you more time to use its "years ahead" digging efficiency!

24M47C

BUCYRUS ERIE

Booms: 110 to 250 ft.
Buckets: 4 cu. yd. to 25 cu. yd.

BUCYRUS - ERIE COMPANY

ARE YOU OPERATING

ARMY TRUCKS?

We are Specializing in Parts For The Following Army Trucks

GMC—Studebaker—Reo
2½ TON 6x4 and 6x6

CHEVROLET 1½ TON 4x4—JEEP

DODGE ½, ¾, 1½ TON 4x4

FOR FREE "PARTS & PRICE LISTS"
SEND US A POSTAL CARD TODAY GIVING MAKE & CAPACITY OF YOUR TRUCK

W. O. Hensley Truck Parts
P.O. BOX 747 PHONE CRAWFORD 3734
517 No. 25th ST., TERRE HAUTE, IND.

New trade literature

Title: **"Euclid" Earthmoving Film**
Subject: "Euclids Move the Earth," a new full 16-mm. sound film covering Euclid's complete line of off-the-highway earthmoving equipment is now available for booking.

Filmed by company cameramen, it is a pictorial on-the-job movie of the various applications of earth-moving equipment in metallic and non-metallic strip mines, on highway and railroad projects, airports, dams, levees, etc.

Where to Get: See Euclid distributors about booking, or write Sales Development Department, The Euclid Road Machinery Co., Cleveland 17, Ohio.

Title: **"Gardner-Denver" Film**
Subject: A new 16-mm. film in color, with sound, featuring heavy rock excavation on four construction projects, has just been released. Titled, "Man Against Rock," this film is purely educational in nature and carries no advertising throughout its 33 minute run.

The film dramatically portrays rock drilling, blasting, mucking, and other phases of construction work.

Where to Get: Prints of the film are available for showing to schools, engineering societies, and other organizations interested in this type of work. Write to Advertising Department, Gardner-Denver Company, Quincy, Illinois.

Title: **Batch Plant Catalog**
Subject: A new and colorful 24-page catalog, "Roadbuilders Portable Batching Plants," has just been published by The C. S. Johnson Company.

Using more than 65 actual photographs, schematic drawings and specification charts, the booklet presents the manufacturer's ideas for aggregate and cement handling arrangements.

Also included in the new booklet are complete descriptions and photographs of four new pieces of batching equipment: the All-Purpose Bin; the convertible Hi-Speed Batcher; the Lo-Bin Trolley Batcher; and the Elevating Cement Charger.

Where to Get: The C. S. Johnson Company, Champaign, Illinois (Free).

Title: **Magnetic Separator Catalog**
Subject: A new 8-page, two color catalog describing the complete line of Eriez permanent non-electric magnetic separators, is now available. Complete specifications regarding weights, sizes, and strength comparisons for various types of plate magnets are given as well as tables of operating capacities for permanent magnetic pulleys, drums, pneumatic line assemblies, and pipeline traps.

Where to Get: Eriez Manufacturing Company, 194 East 12th Street, Erie, Pennsylvania. Ask for Catolog No. 12 (Free).

MOON Generators
for LIGHT and POWER
TURBO and BELT DRIVEN
The Ideal Small Power Plant

IMPORTANT MOON FEATURES

- COMPOUND WINDING AND SENSITIVE GOVERNOR on steam driven models maintain steady voltage from No load to Full load.
- NEW AUTOMATIC SIGHT-FEED OILERS.
- AUTOMATIC OVERSPEED CUT-OFF VALVE prevents any possible overspeed damage to generator.

For Lights . . . Ventilating Fans . . Other Electrical Equipment . .

SEND TODAY FOR ILLUSTRATED CIRCULARS.
MODELS FROM 1 TO 7½ KW CAPACITY.

Moon MANUFACTURING CO.
ESTABLISHED 1893
122 N. JEFFERSON ST. . . . CHICAGO 6 . . . ILLINOIS

IMPROVED OWENS DIG for IMPROVEMENTS . . . EVERYWHERE

Long experience and intensified experimentation has enabled Owen engineers to originate designs, utilize special alloys and develop methods of manufacture that reduce weight, increase strength and provide greater wear resisting qualities.

"Owen Clamshell Buckets Insure a Bigger Day's Work."

The Owen Bucket Company
6095 Breakwater Avenue, Cleveland, Ohio
Branches: New York • Philadelphia • Chicago • Berkeley, Cal

A MOUTHFUL AT EVERY BITE

TO ADVERTISE: All advertising in this section is payable in advance. Rate: 60c per line, or $7.20 per inch of 12 lines. Minimum charge $2.40. No discounts; no commissions. Please count your copy carefully to avoid delay. Each line contains 41 characters (34 characters if all capital letters are used). Count spaces and punctuation as one character each. Allow 10 characters for box number, if blind advertisement is desired. Be sure to enclose the correct amount of money with your order. Closing date — 15 of preceding month. Example: January closes December 15th.

TO INQUIRE: Be sure to address your inquiry to the advertiser by using the correct box number. Mail your letter in care of Excavating Engineer, South Milwaukee, Wisconsin. Write each advertiser a separate letter. Do not write us for name and address of advertiser. This information will not be given out. We have no information about the equipment advertised other than that shown in the advertisements themselves.

LARGE SHOVELS, CRANES AND DRAGLINES
2½ YDS. AND UP

Used Marion Model 4161 dragline, 110 ft. boom, 4 yd., central location. Box 3292

3-yard dragline, P&H Model 955, diesel, long cats, bucket, 80 ft. boom, Serial 5958; good condition; price f.o.b. cars near Madisonville, Ky., $31,900.

Roy C. Whayne Supply Co. Louisville 2, Ky.

Northwest 3-yd. dragline. Shovels 1; 1¼; 1½ yd. Northwest No. 6.

A. W. Nevers Mt. Pleasant, Iowa

FOR SALE
2½-yd. P & H Electric Shovel, Model 1225

This shovel has a 3-yard bucket and is in very good mechanical and electrical condition.

Shovel can be demonstrated under power.

Electrical equipment: 3 phase, 60 cycle, 2300 volts.

Good selection of new parts to be sold with shovel.

JOHNS MANVILLE PROD. CORP.
Lompoc, California

SMALL SHOVELS, CRANES AND DRAGLINES
UP TO 2½ YDS.

1941, Model 255A, P&H excavator, serial 6559, equipped as a dragline with a Waukesha gasoline engine, 35' boom, 2 boom point sheaves, 20" grouser shoes, and a spring type tagline winder. Just overhauled and in excellent condition. $9500. Box 3293

36 Marion steam coal loader, fair condition and on cats. Price $1500.

Robinson Coal Company
Pleasanton, Kansas

1-yd. Northwest Model #105 gas shovel located Rye, N. Y. Fine condition, ready for work. Cash, $4500.

English Contracting Co. Rye, N. Y.

BUCYRUS-ERIE 21-B ¾-yd. 45 ft. boom dragline. Excellent condition. Immediate delivery, $9000. FOB Zellwood, Fla. G. J. Hayslip, Zellwood, Fla.

Bucyrus-Erie 50-B diesel combination shovel and dragline. Serial Number 4710. Price $10,000 f.o.b. Watsonville, California. Box 3281

MISCELLANEOUS EQUIPT.

3—DW-10 Caterpillar diesel tractors with W-10 bottom dump trailers. Standard capacity 8⅛ to 11 cubic yards. Units have 6 cu. yd. top extensions mounted for coal hauling job and are in excellent condition. Price $10,000 each, F.O.B. present job site.

2—15 cu. yd. Heil bottom dump earth haulers—excellent condition. Price $10,000 each, F.O.B. present job site.

Brandeis Machinery & Supply Co., Inc.
Louisville, Ky. Evansville, Ind.
CAlhoun 4741 3-4491

Two 3¼ cubic foot ladder dredges, one electric and the other diesel driven, sectionalized construction, well maintained, immediately available. Western location. Box 3294

Bucyrus-Erie Model H-74 hydraulically operated two-wheel scraper, complete with two (2) 14x20 tires, with adapter piping and control valve, struck capacity 7 yards — heaped 9 yards, suitable for use with International TD-18 or similar size tractor equipped with hydraulic blade. Slightly used—$1750.

H. O. Penn Machinery Co., Inc.
140th Street & East River
New York 54, N. Y.

4 — slightly used, but like new, "Firestone" rubber tires 21.00"/28", 20 ply, "GG Earthmover" with tubes and flaps. At bargain price. Box 3288

Int'l. TD-18 with B-E hydraulic dozer. A. C. HD-7 with Baker hydraulic dozer. Osgood heavy duty ½ yd. backhoe with shovel attachment. Studebaker 6 x 6 dump truck. Box 3290

Complete shovel front for Bucyrus-Erie 10-B twin rope crowd machine. Also 28 ft. clamshell boom with drum lagging for same machine. Box 3287

Pull shovel attachment for Manitowoc Model 2000. New, never used. Located Chicago, immediate delivery. Box 3289

ALL-STEEL DERRICKS

10—30 ton capacity BRAND NEW Wiley all steel stiffleg derricks, 32' masts, 60' booms, complete; can furnish with gasoline, electric or steam hoists.

ALSO

Air compressors, bins, boilers, cable, conveyors, cranes, crushers, engines, hammers, cone, mixers, light plants, pneumatic tools, pavers, pumps, saw rigs, welders.

EQUIPMENT CORPORATION of AMERICA

CHICAGO 12
1170 S. Washtenaw Av.

PHILADELPHIA 2
1505A Race St.
Schaff Bldg.

PITTSBURGH 30
P.O. Box 933D

NEW YORK 7
30D Church Street

USED 18" OR 20" ELECTRIC HYDRAULIC DREDGE. MID-WESTERN LOCATION.
BOX 3251

SURPLUS STOCK SALE

Dippers for Bucyrus-Erie Shovels

1—½ cu. yd. drag shovel dipper—17-B.
1—2 cu. yd. rock dipper 75-B.

New Dragline Buckets

2¼ yard Red Arch Type AX medium duty bucket.
5 yard Red Arch Type AY heavy duty bucket.
6 yard Red Arch Type AY heavy duty bucket.

F.O.B. Works
Write for any further information desired

BUCYRUS-ERIE COMPANY
Parts Department
South Milwaukee Wisconsin

FOR SALE

- **Two Euclid dump trucks, new 1943; equipped with 10-yd. bodies, Cummins Diesel engines.**
- **One Northwest shovel and crane Model 104, equipped with 1½-yd. bucket, 40-ton boom.**

One Model WS Allis-Chalmers tractor with Baker bulldozer.

KLATZKY BROTHERS
NEWBERRY, MICHIGAN

Bucyrus-Erie No. 8 bit dresser. Complete and in perfect operating condition. Located in Washington State. Box 3271

MECHANICS • HOME STUDY

Step up your own skill with facts & figures of your trade. Audels Mechanics Guides contain Practical Inside Trade Information in handy form. Fully illustrated. Easy to Understand. Highly Endorsed. Check book you want for 7 days' Free Examination. Send no Money. Nothing to pay postman. ☐ Carpentry $6 • ☐ Auto $4 • ☐ Oil Burners $1 ☐ Sheet Metal $1 • ☐ Welding $1 • ☐ Refrigeration $4 ☐ Plumbing $6 • ☐ Masonry $6 • ☐ Painting $2 • ☐ Radio $4 ☐ Electricity $4 • ☐ Mathematics $2 • ☐ Steam Engineers $4 ☐ Machinist $4 • ☐ Blueprint $2 • ☐ Diesel $2 • ☐ Drawing $2. If satisfied you pay only $1 a month until price is paid.
AUDEL, Publishers, 49 W. 23 St., New York 10, N. Y.

New independent diesel driven electric generating plant, 650 H.P. diesel engine, 420 K.W., 2300 volts, 3 phase, 60 cycle generator, mounted on rubber-tired special trailer. Located in Central Nebraska. Box 3277

Surplus Swivel Hook Double Sheave Block
1 40 ton "American" 24" swivel hook double sheave block, diamond pattern with cast steel sheaves grooved for ⅞" rope. Sheaves to be bushed with plain bronze bushings, with center bored sheave pin and ¼" Alemite hydro grease fitting No. 1980 equipped with 300 lb. cheek weights and 5½" swivel hook. Total weight of block 1190 lbs. Dwg. BEFP 1-M-6560.

BUCYRUS-ERIE COMPANY
South Milwaukee, Wisconsin

WANTED: High Lift shovels for coal stripping. Box 3284

(Continued on page 56)

For Sale

(Continued from page 55)

POSITIONS WANTED

Dragline crane operator with 28 years experience building, repairing and operating gas, diesel, steam and electric machines including Bucyrus-Erie, Northwest, Bay City and other makes. Has worked overseas. Willing to go anywhere in the world on long job that would enable wife to accompany him. Box 3291

CAN THIS MAN HELP YOU?

College graduate with 13 years quarrying, crushed stone and building block manufacturing experience and some sales experience, who lives in Central Eastern Pennsylvania, desires a permanent sales representative connection with a manufacturer or distributor of power shovels or crushing, screening, conveying, block manufacturing or allied lines of equipment, or mill supplies. Territory — Eastern Pennsylvania and adjacent areas. For further information write: Box 3286

Manufacturers' Notes

(Continued from page 50)

Koehring Company, Milwaukee 10, Wisconsin, announces that John S. Conway, formerly Export Sales Manager, has been appointed General Sales Manager. At the same time, the company named John E. Chadwick Assistant Sales Manager and R. E. Stewart Export Sales Manager.

In his new post, Mr. Conway succeeds J. F. Robbins who will become President and General Manager of the Capitol Equipment Company, a Koehring distributor in Harrisburg, Pennsylvania.

Pennsylvania Rubber Company, Jeannette, Pennsylvania, announces the appointment of James M. Hughes as Assistant Sales Manager.

Allis-Chalmers Manufacturing Company, Milwaukee 1, Wisconsin, announces that William J. Faulkner has resigned as Industrial Sales Manager of the firm's Tractor Division to become Vice President and part owner of Frantz Tractor Company, Allis-Chalmers' New York dealer.

The Trailmobile Company, Cincinnati 9, Ohio, has appointed James A. Bardsley Assistant Sales Manager. For the past four years, Mr. Bardsley has been manager of the company's branch in Indianapolis. In his new position, he will serve as assistant to L. E. Craig, Sales Manager in in charge of branch operations for the firm.

C. H. Morge, Resident Salesman in Terre Haute, has been named to succeed Mr. Bardsley as Indianapolis Branch Manager.

Barber-Greene Company, Aurora, Illinois, manufacturer of bituminous mixing and finishing machines and material handling equipment, announces the appointment of Fuchs-Clayton Machinery Company as distributor of the firm's Construction and Industrial Divisions in the Western tier of counties in Iowa and in all of Nebraska.

Barber-Greene products being handled by the firm include bituminous mixing and paving machines, portable bulk material loaders, snow loaders, ditchers, portable and permanent belt conveyors, and coal handling equipment for retail and industrial applications.

Nordberg Manufacturing Company, Milwaukee 7, Wisconsin, has promoted R. R. Schultz to Sales Manager of the Crusher and Process Machinery Divisions.

The Worthington Pump and Machinery Corporation, Harrison, New Jersey, announces the appointment of Harold T. Anderson as Assistant to the General Sales Manager, in charge of Sales Production Relations, with headquarters at the Harrison, New Jersey, plant.

Mr. Anderson will be responsible for receiving and interviewing representatives of customers' organizations who visit the plant seeking current information with respect to production schedules of specific orders.

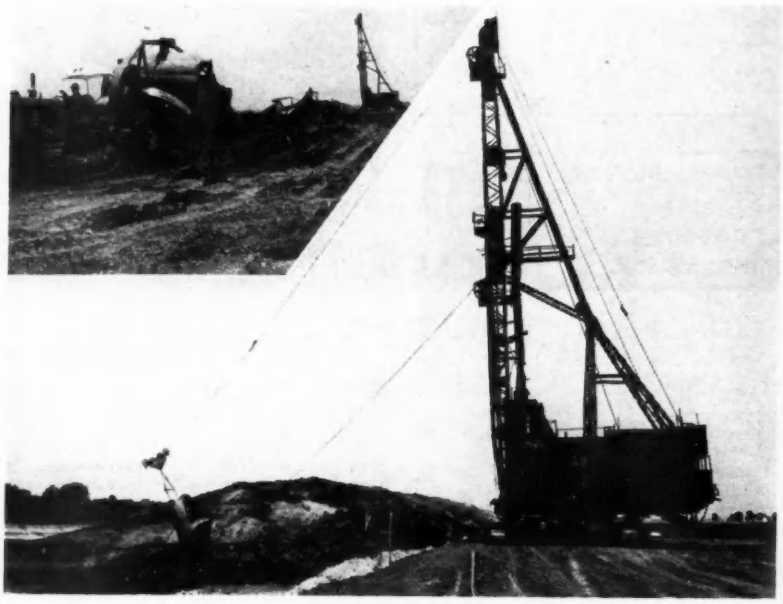
R. G. LeTourneau, Incorporated, Peoria, Illinois, has promoted Danforth K. Heiple to Chief Field Engineer. In his new duties, Mr. Heiple will give sales assistance to LeTourneau distributors in planning equipment applications and compilation of earth-moving production and cost.

The Osgood Company, and its associate, The General Excavator Company, Marion, Ohio, announce the appointment of Fred W. Raab to the position of Export Manager.

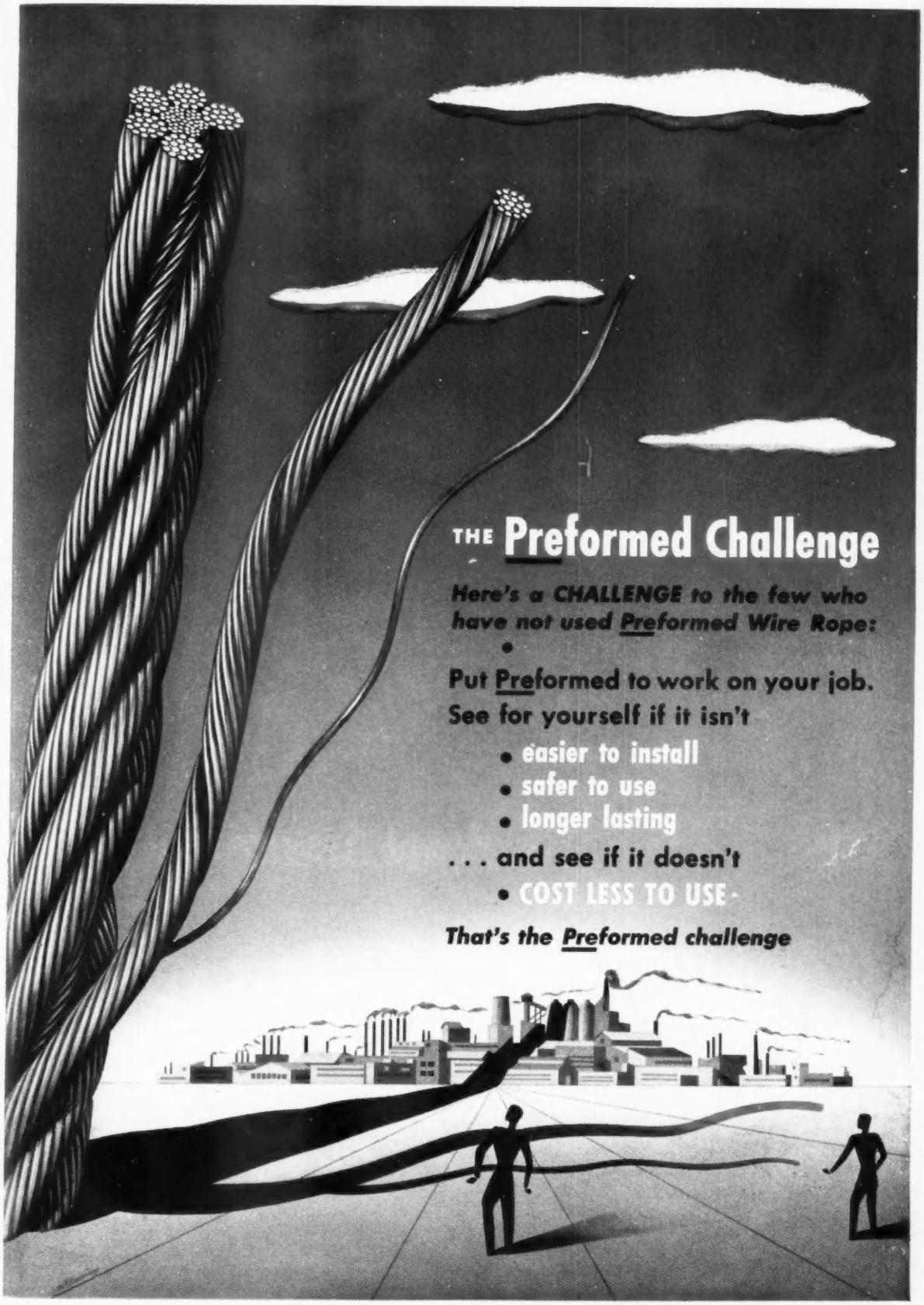
The Herman Nelson Corporation, Moline, Illinois, announces the appointment of James D. Hodges as Eastern Divisional Manager of the company's line of portable heaters and portable ventilators. For the past three years Mr. Hodges has been Service Manager of the Portable Products Division.

Mack Trucks, Incorporated, New York City, New York, has appointed W. M. Watkins District Manager of the firm's Indianapolis branch. From headquarters at 421 Kentucky Avenue, Mr. Watkins will direct Mack truck, bus, and fire apparatus sales and service for the Indianapolis territory.

Gorman-Rupp Company, Mansfield, Ohio, announces the election of three new vice presidents. The new officers are Warren E. Rupp, formerly Chief Engineer; Walter O. Buehler, who recently resigned as Vice President of the Carver Pump Company; and Kenneth H. Cadigan, former Sales Engineer of the firm.



• Working on the Harrisonville & Ivy Landing Drainage and Levee project 8 miles north of Ft. Chartres, Ill., is this Bucyrus-Erie tower excavator owned by Luhr Bros. Excavating Co., Columbia, Ill. Equipped with a 15-yd. Sauerman bucket, the machine works three shifts a day, moves 15,000 yards every 24 hours. Total excavation involved is 2,000,000 yards. The Caterpillar tractor and LeTourneau scraper (inset) are used to build a grade on which to move the tower excavator.


THE Preformed Challenge
Here's a CHALLENGE to the few who have not used Preformed Wire Rope:
Put Preformed to work on your job.
See for yourself if it isn't
• easier to install
• safer to use
• longer lasting
. . . and see if it doesn't
• COST LESS TO USE -
That's the Preformed challenge

Barber-Greene

720 Ditcher

For digging trenches 8" to 11" wide—up to 4 feet in depth. Digging speeds up to 32 F.P.M.; traveling speeds as high as 234 F.P.M. adjustable spoils conveyor discharges on either side. Three-position boom adjustable to dig close to obstructions. Simple B-G controls, easy-steering.

Two great new ditchers in the B.G. line!

These two new ditchers bring exclusive, time-proved B-G advantages . . . the B-G Vertical Boom that digs straight down, leaves no ramp . . . close-spaced, self-cleaning buckets that *cut*, like a milling machine, into toughest ground . . . the patented B-G overload Release for greater protection . . . *plus* special features for their types of service.

710 Ditcher

Digs trenches 5½" wide up to 42" deep. Digging speeds up to 32 F.P.M.; travel speeds up to 234 F.P.M. Vertical three-position boom digs close to obstructions. Cable-laying attachment available to feed cable and plow over the spoil in one continuous pass.

Ask your Barber-Greene distributor for full details on the B-G Ditcher which interests you — or write to Barber-Greene Company, Aurora, Illinois.

BARBER · GREENE COMPANY, AURORA, ILLINOIS

Constant flow Equipment

LOADERS · PERMANENT CONVEYORS · PORTABLE CONVEYORS · COAL MACHINES · BITUMINOUS PLANTS · FINISHERS · DITCHERS